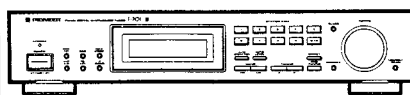


# Service Manual



ORDER NO.  
**ARP2466**

**FM/AM DIGITAL SYNTHESIZER TUNER**

# F-701

# F-701-G

**F-701 AND F-701-G HAVE THE FOLLOWING :**

Type	Model		Power Requirement	Remarks
	F-701	F-701-G		
HEWZ	○	—	AC 220—230 V, 230—240 V (switchable)*	
HEWZI	—	○	AC 220—230 V, 230—240 V (switchable)*	
HE	○	○	AC 220—230 V, 230—240 V (switchable)*	

\* Change the connection of the power transformer's primary wiring.

- This manual is applicable to the following : F-701/HEWZ and HE ; F-701-G/HEWZI and HE.
- For the following : F-701/HE ; F-701-G/HE and HEWZI, refer to page 34.
- F-701-G is the same as F-701 except for color.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

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# 1. EXPLODED VIEWS, PACKING AND PARTS LIST

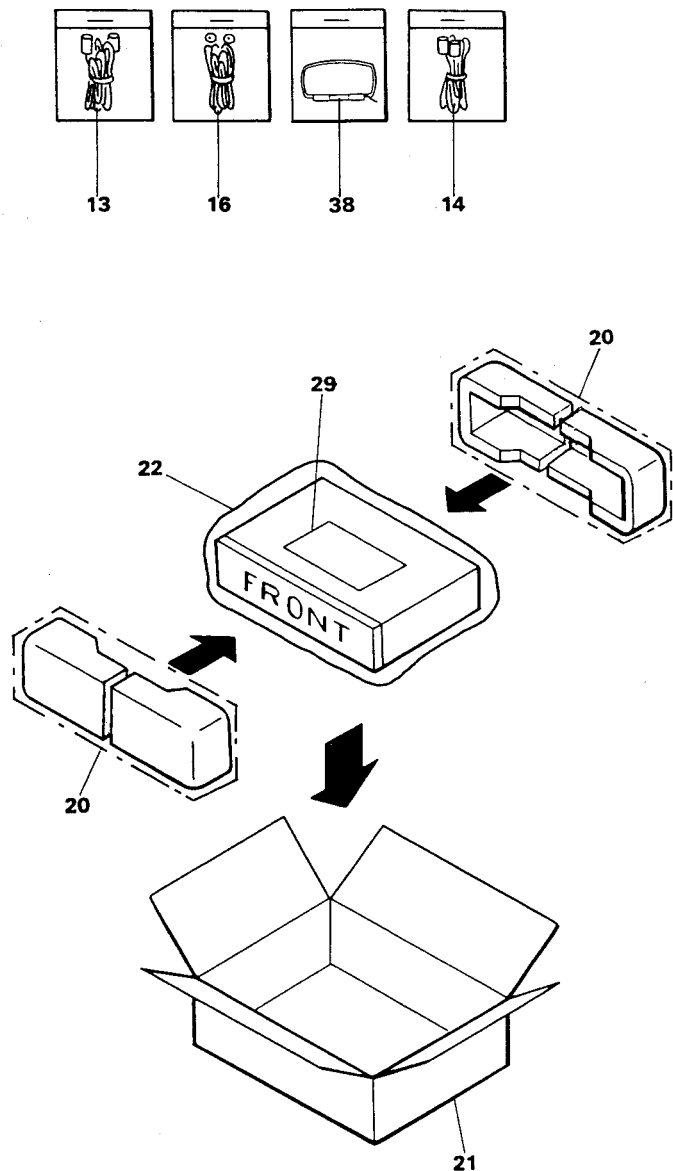
## NOTES:

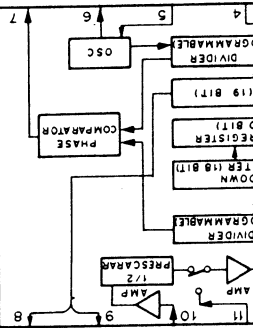
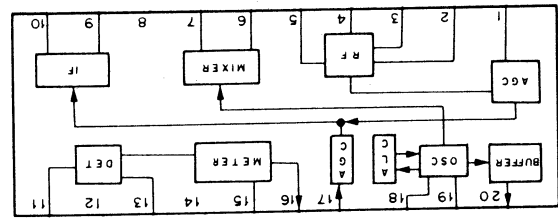
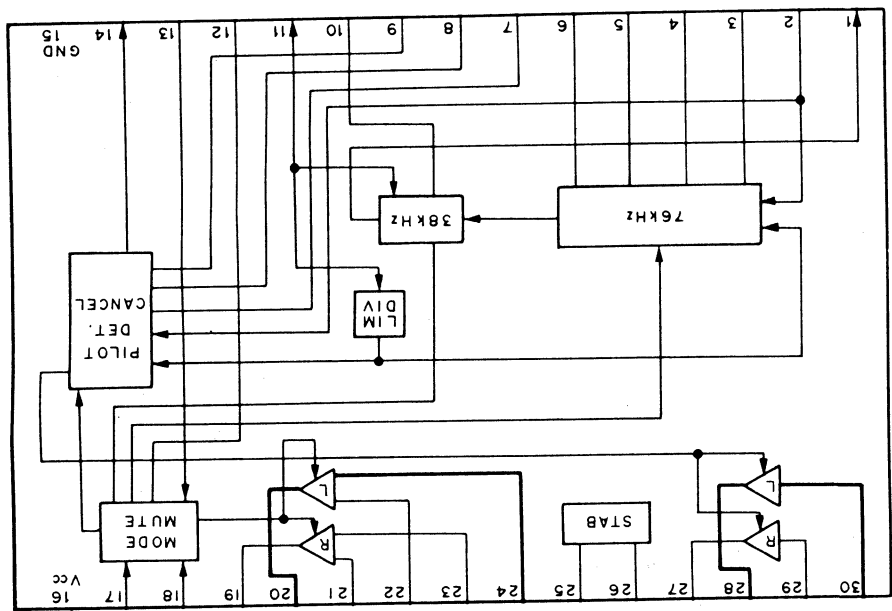
- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

## Parts List

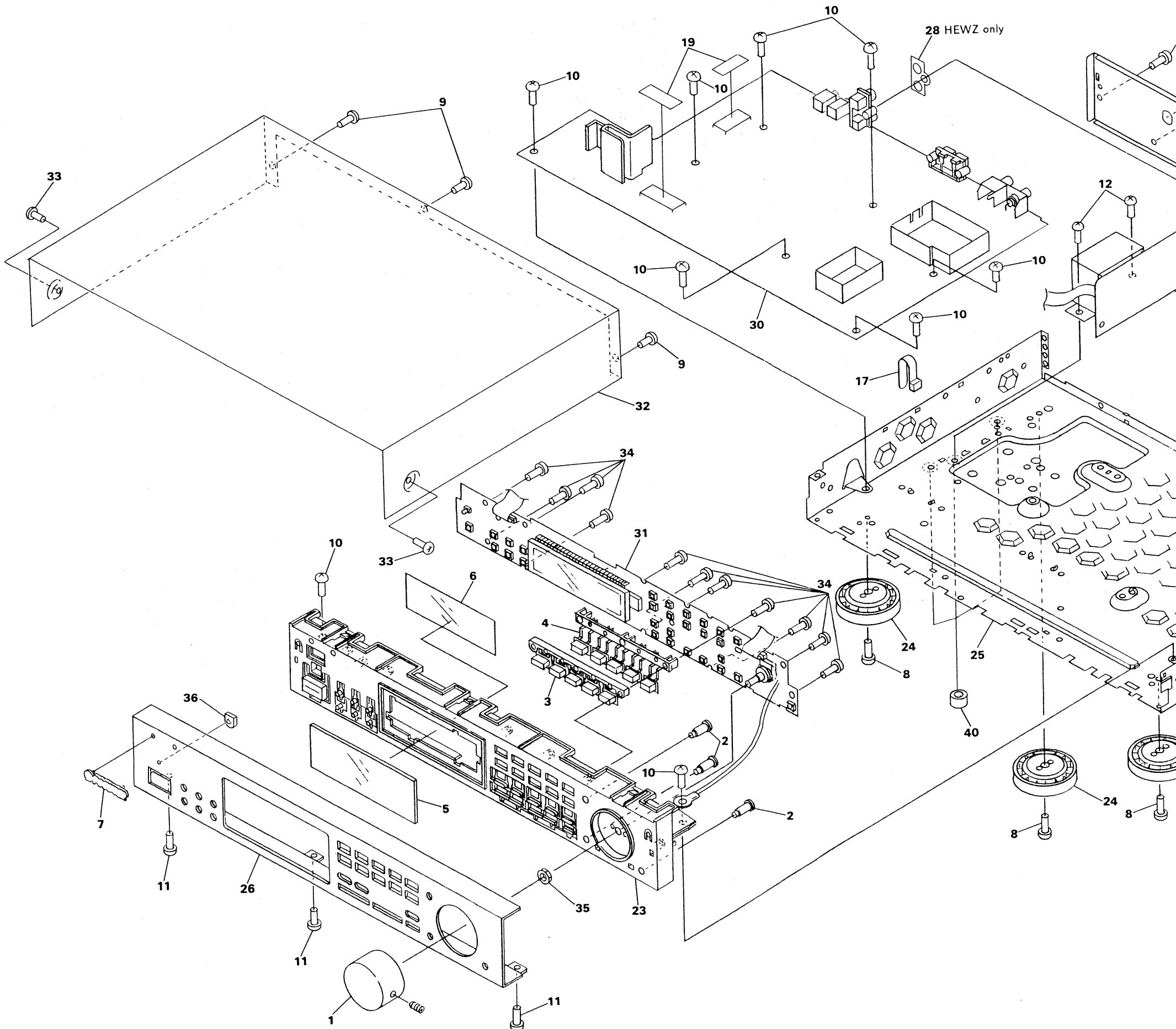
Mark	No.	Description	Parts No.
	1	ROTARY KNOB	AAA1012
	2	BUTTON (MEMORY SCAN, MEMORY, CLASS)	AAD1682
	3	STATION BUTTON A(ABS)	AAD2218
	4	STATION BUTTON B(ABS)	AAD2219
	5	PANEL	AAK2282
	6	FL FILTER	AAK2283
	7	NAME PLATE (METAL)	AAM1029
	8	SCREW	ABA-298
	9	SCREW (STEEL)	ABA1009
	10	SCREW (STEEL)	ABA1011
	11	SCREW (STEEL)	ABA1048
	12	SCREW (STEEL)	ABA1053
	13	PLUG CORD	ADE-052
$\Delta$	14	CORD WITH PLUG	ADE-085
	15	AC POWER CORD	ADG1019
	16	FM ANTENNA	ADH1002
NSP	17	NYLON BINDER	AEC-093
	18	STRAIN RELIEF	AEC-882
NSP	19	CU PLATE	AEF1006
	20	FRONT REAR PAD	AHA1095
	21	PACKING CASE	AHD2241
	22	PACKING SHEET	AHG1017
	23	PANEL BASE	AMB1962
	24	INSULATOR ASSY	AMR2140
NSP	25	CHASSIS	ANA1141
	26	FRONT PANEL	ANB1497
NSP	27	REAR PANEL	ANC1866
	28	GROUNG PLATE	ANK1091
	29	OPE. INSTRUCTIONS (German/Italian)	ARC1334
●	30	MAIN ASSEMBLY	AWZ4098
	31	DISPLAY ASSEMBLY	AWP1041
	32	BONNET	AZN1745
	33	SCREW	BBT30P060FZK
	34	SCREW	BPZ26P080FMC
	35	NUT	NK70FUC
	36	LED LENS	PNW2019
	37	SCREW	VMZ30P060FCU
	38	LOOP ANTENNA(L1)	ATB1005
NSP	39	POWER ASSEMBLY	AWZ4100
NSP	40	SPACER	AEB1084

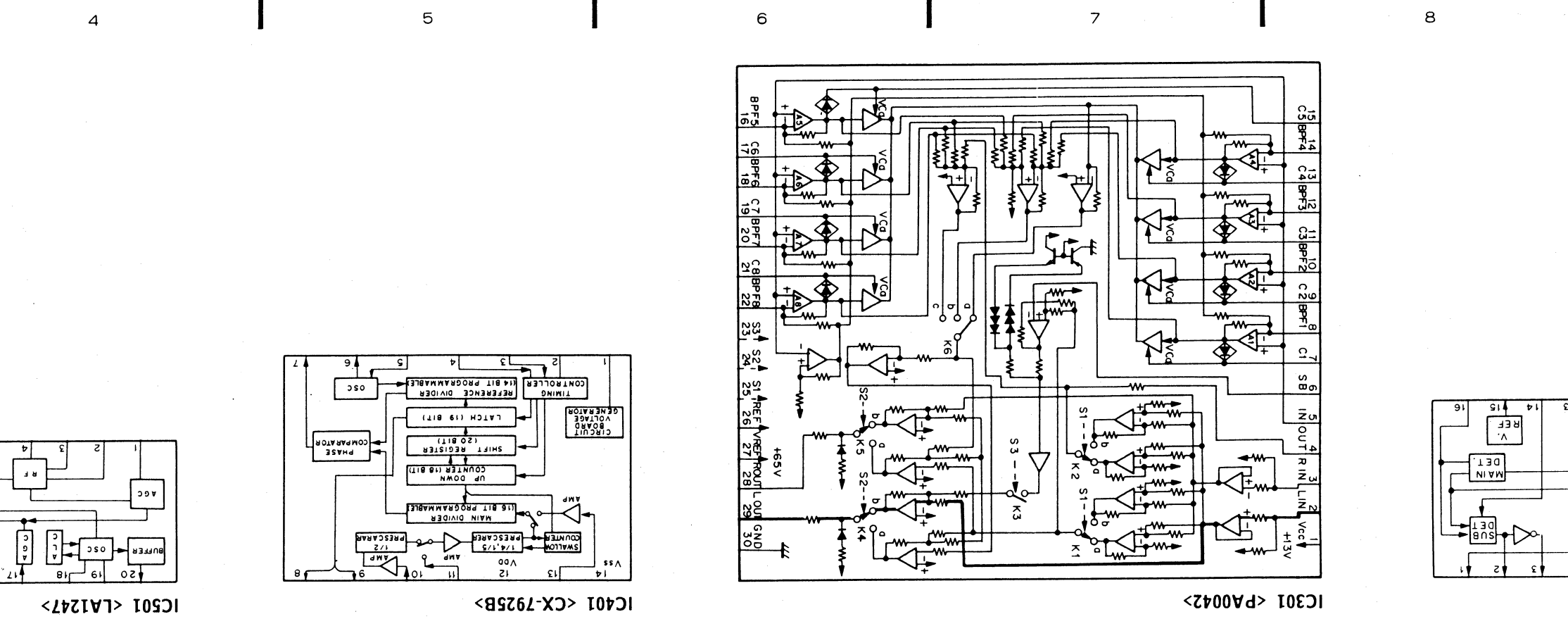
## PACKING





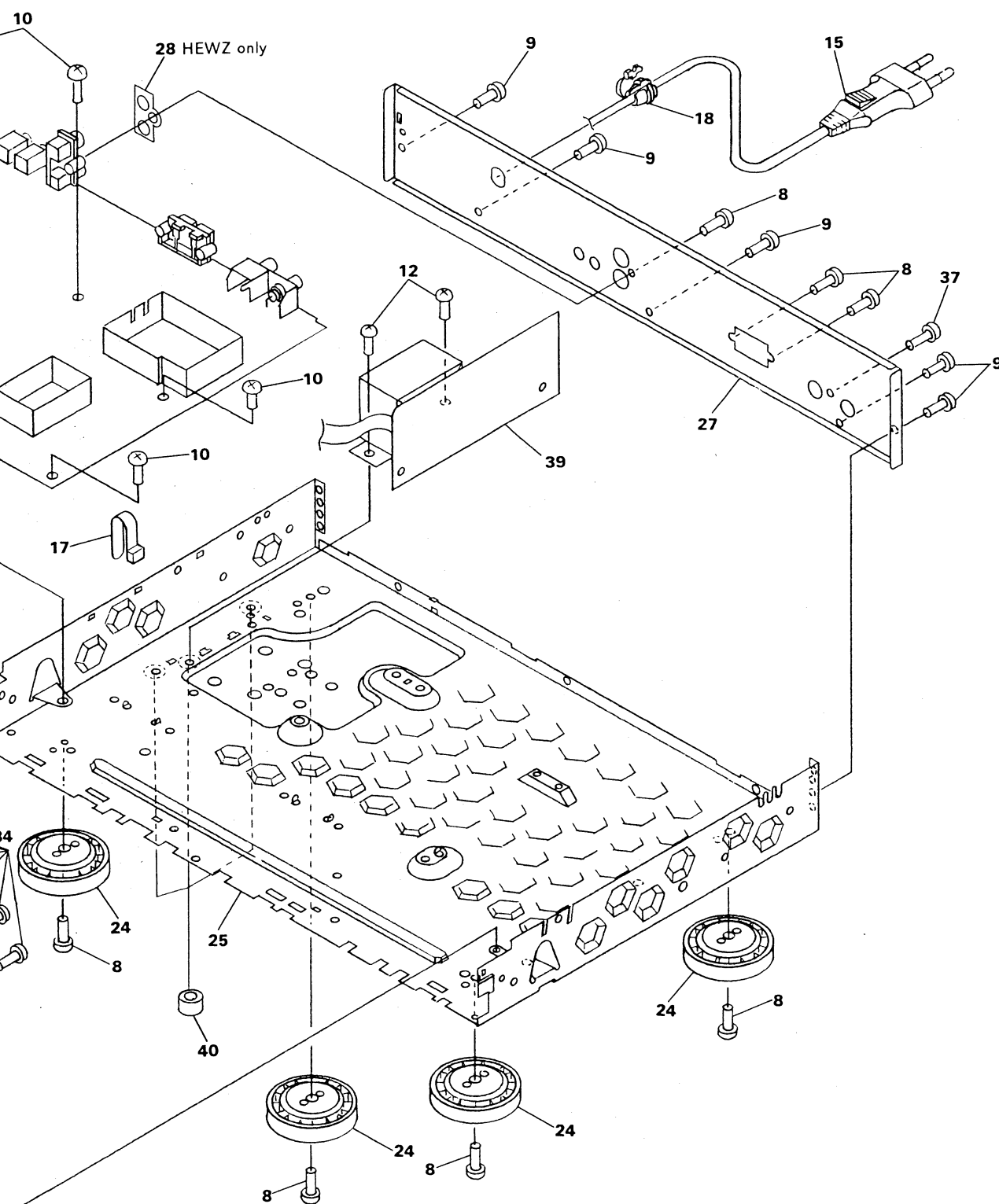
# EXPLODED VIEWS





## DIAGRAM

## 2. SCHEMATIC AND PCB CONNECTION



1. RESISTORS :  
Indicated in  $\Omega$ , 1/4W, 1/6W and 1/8W,  $\pm 5\%$  tolerance unless otherwise noted k ; k $\Omega$ , M ; M $\Omega$ , (F) ;  $\pm 1\%$ , (G) ;  $\pm 2\%$ , (K) ;  $\pm 10\%$ , (M) ;  $\pm 20\%$  tolerance.

2. CAPACITORS :  
Indicated in capacity ( $\mu$ F)/voltage(V) unless otherwise noted p ; pF. Indication without voltage is 50V except electrolytic capacitor.

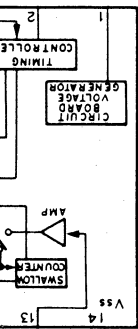
3. VOLTAGE, CURRENT :  
□ : DC voltage (V) at no input signal unless otherwise noted.  
Value in ( ) is DC voltage at rated power.  
◊mA or ←mA ; DC current at no input signal unless otherwise noted.  
mV ; Signal voltage at FM 1kHz  $\pm 75$  kHz DEV.

4. OTHERS :  
→ ; Signal route  
⊙ ; Adjustment point  
▼(Red) ; Measurement point  
The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.  
※ marked capacitors and resistors have parts numbers.

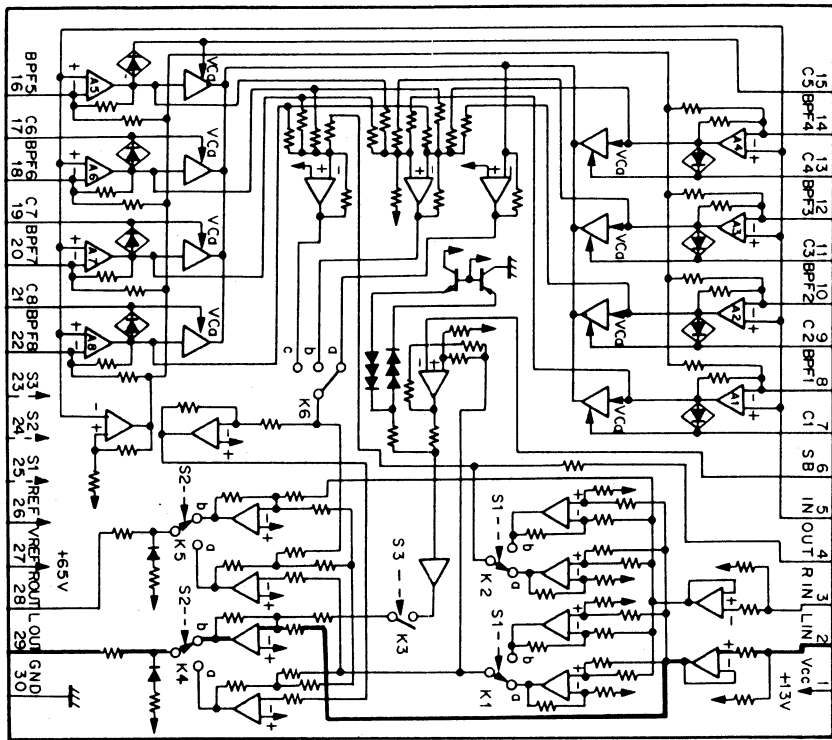
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES :  
DISPLAY ASSEMBLY  
S901 : SSS  
S902 : ST1  
S903 : ST2  
S904 : ST3  
S905 : ST4  
S906 : ST5  
S907 : ST6  
S908 : ANT A/B  
S909 : ST7  
S910 : ST8  
S911 : ST9  
S912 : ST0/ST10  
S913 : CLASS  
S914 : MEMORY SCAN  
S915 : RF ATT  
S916 : FM (BAND)  
S917 : AM (BAND)  
S918 : IF BAND  
S919 : MEMORY  
S920 : - (TUNING)  
S921 : + (TUNING)  
S922 : POWER  
S923 : MPX MODE  
S924 : MPX NR  
S925 : AUTO OPERATION  
S926 : AUTO LEVEL  
S927 : FINE TUNING  
S928 : DIRECT  
S929 : TUNING

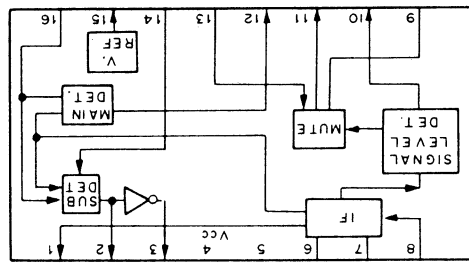




IC401 <CX-401>



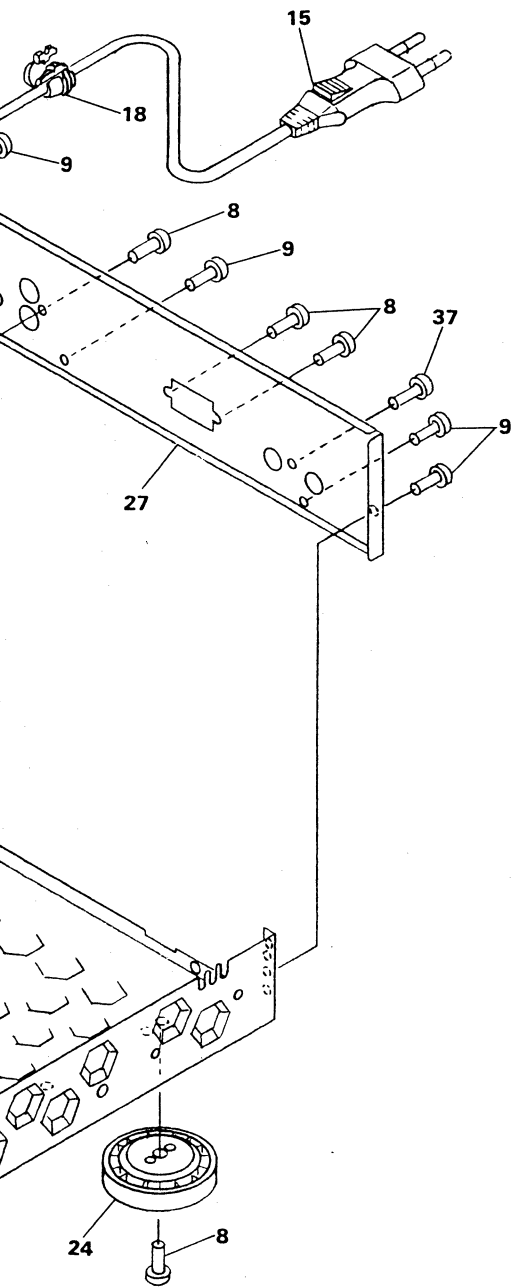
IC301 <PA0042>



IC201 <PA5008>

• IC BLOCK DIAGRAM

2. SCHEMATIC AND PCB CONNECTIONS DIAGRAMS



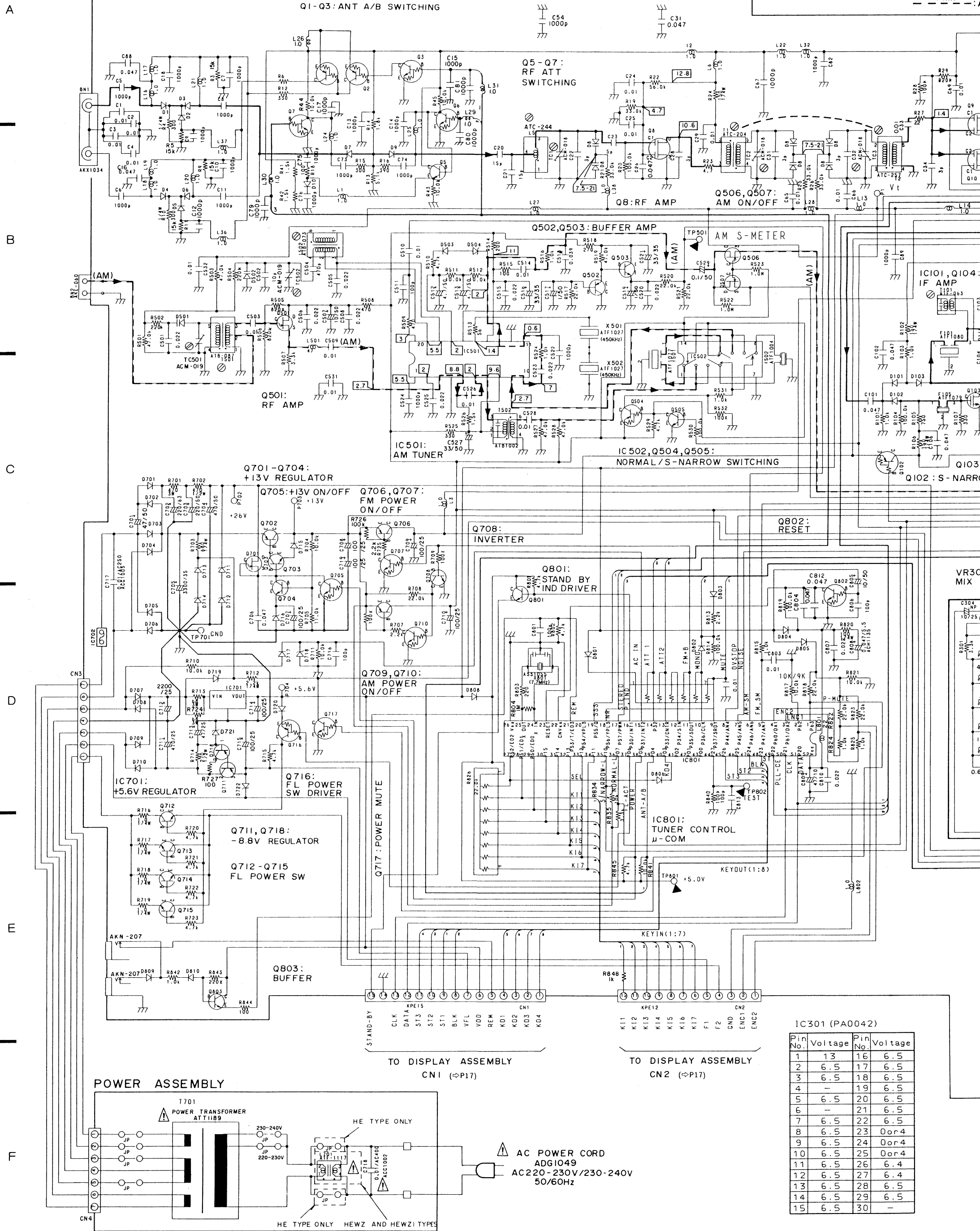
1. RESISTORS :  
Indicated in  $\Omega$ , 1/4W, 1/6W and 1/8W,  $\pm 5\%$  tolerance unless otherwise noted k ; k $\Omega$ , M ; M $\Omega$ , (F) ;  $\pm 1\%$ , (G) ;  $\pm 2\%$ , (K) ;  $\pm 10\%$ , (M) ;  $\pm 20\%$  tolerance.
2. CAPACITORS :  
Indicated in capacity ( $\mu$ F)/voltage(V) unless otherwise noted p ; pF. Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE, CURRENT :  
 : DC voltage (V) at no input signal unless otherwise noted. Value in ( ) is DC voltage at rated power.  
 : DC current at no input signal unless otherwise noted. mA or  $\mu$ A ;  
 : Signal voltage at FM 1kHz  $\pm 75$  kHz DEV.
4. OTHERS :  
 : Signal route  
 : Adjustment point  
 (Red) : Measurement point  
The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.  
※ marked capacitors and resistors have parts numbers.

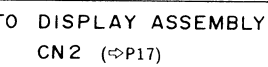
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

5. SWITCHES :  
DISPLAY ASSEMBLY  
S901 : SSS  
S902 : ST1  
S903 : ST2  
S904 : ST3  
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S907 : ST6  
S908 : ANT A/B  
S909 : ST7  
S910 : ST8  
S911 : ST9  
S912 : ST0/ST10  
S913 : CLASS  
S914 : MEMORY SCAN  
S915 : RF ATT  
S916 : FM (BAND)  
S917 : AM (BAND)  
S918 : IF BAND  
S919 : MEMORY  
S920 : - (TUNING)  
S921 : + (TUNING)  
S922 : POWER  
S923 : MPX MODE  
S924 : MPX NR  
S925 : AUTO OPERATION  
S926 : AUTO LEVEL  
S927 : FINE TUNING  
S928 : DIRECT  
S929 : TUNING

## 2.1 MAIN AND POWER ASSEMBLIES

MAIN ASSEMBLY (AWZ4098:For HEWZ and HEWZI types)  
(AWZ4099:For HE type)





A



C

C

E

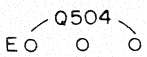
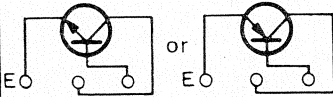
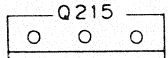
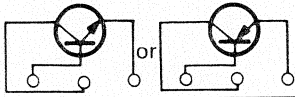
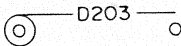

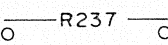
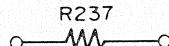
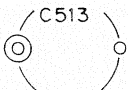
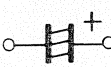
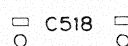

Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage	Pin No.	Voltage
1	7	7	3	13	16.6	19	6.5	25	—
2	3	8	3	14	ST MONO: 12	20	6.5	26	6.5
3	3	9	0	15	—	21	6.5	27	6.5
4	3	10	7	16	13	22	6.5	28	6.5
5	1.4	11	9.8	17	5.3	23	6.5	29	6.5
6	—	12	8.8	18	—	24	6.5	30	6.5

F



NOTE

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

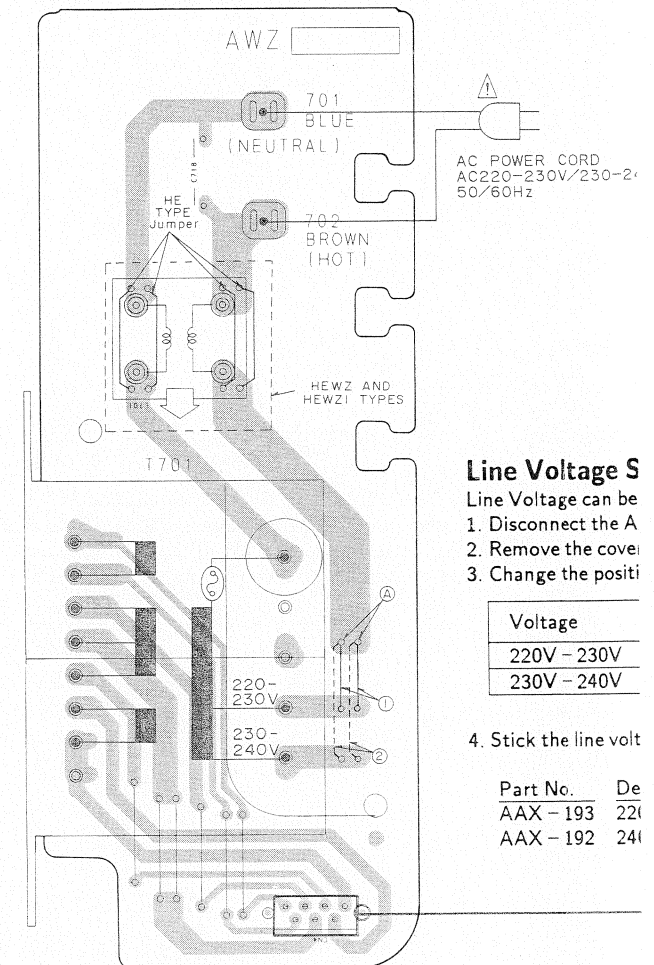
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

Others

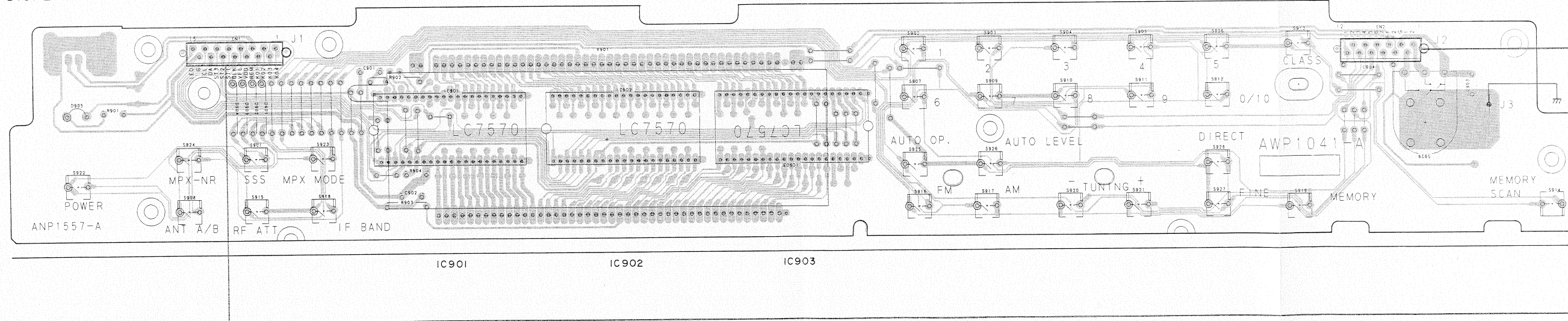
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ⊙ (double circles) shows negative terminal.
4. The diode terminal marked with ⊙ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

POWER ASSEMBLY



DISPLAY ASSEMBLY (AWP1041)





MAIN ASSEMBLY  
(AWZ4098 :For HEWZ and  
HEWZI types  
AWZ4099 :For HE type)

AC POWER CORD  
AC220-230V/230-240V  
50/60HZ

Line Voltage Selection

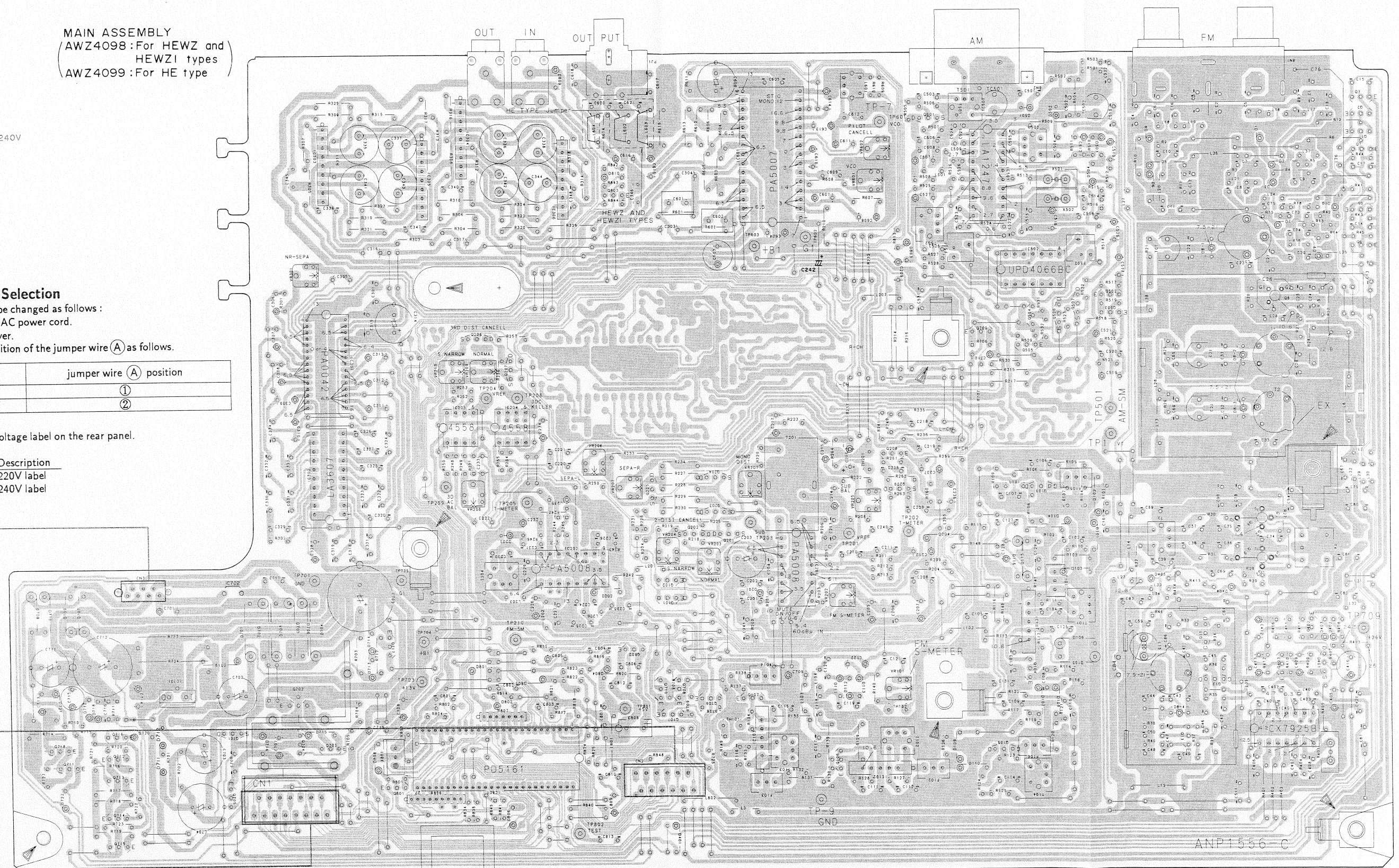
Line Voltage can be changed as follows :

1. Disconnect the AC power cord.
2. Remove the cover.
3. Change the position of the jumper wire (A) as follows.

Voltage	jumper wire (A) position
220V - 230V	①
230V - 240V	②

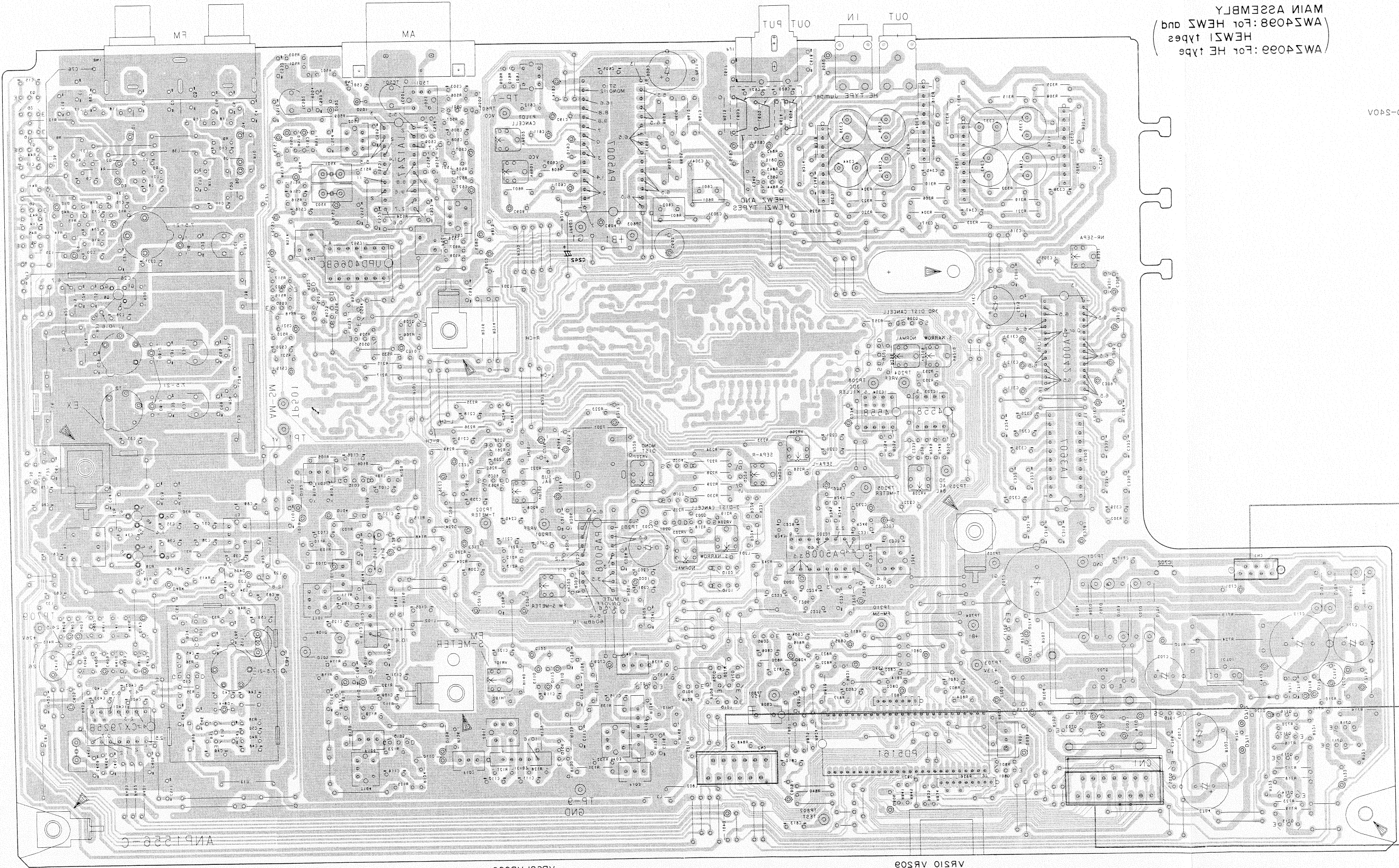
4. Stick the line voltage label on the rear panel.

Part No.	Description
AAX - 193	220V label
AAX - 192	240V label



VR210 VR209										VR206 VR207 VR204 VR203VR201					VR601 VR602				TC501				TC502		TC1 TC2 TC3						
VR301				VR208								VR202 VR205 VR101																			
Q718	Q712 - Q716	IC701	Q701	Q702	IC303	Q717	IC305	IC304	Q207	IC306	Q803	Q205	Q202	Q204	IC601	IC201	Q106	IC102	Q208	Q501	IC501	IC502	Q507	Q502	Q13	Q11	Q9	Q8	Q402	Q1 - Q3	
Q711			Q705	Q704	IC301	Q801		Q206	IC204	IC202	Q802	Q102	Q708	Q203	Q107					Q209		Q709	Q504	Q506	Q503		Q12	Q10	Q403	Q401	Q5 - Q7
					IC302			IC203	IC801			Q101	Q707	Q201	IC103						Q105	Q505	Q103						IC401		
					Q703							Q710		Q706								Q104									





MAIN ASSEMBLY  
AW4098: For HEW types  
AW4098: For HEW types

AC POWER CORD  
20.60H5  
AC250-530V-540A  
BROWN  
(HOT)  
BLUE  
201

HEWlett AND  
HEW types

HEW types

HEW types

HEW types

HEW types

HEW types

HEW types

HEW types

HEW types

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HEW types

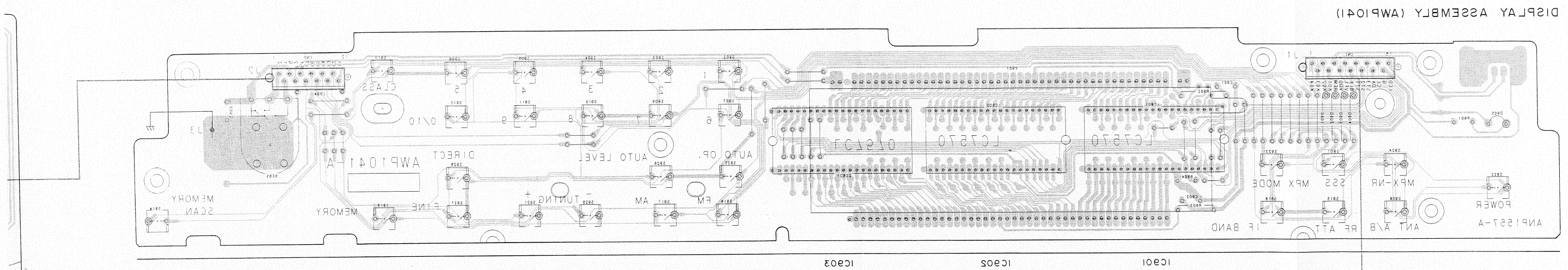
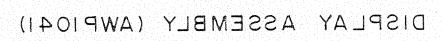
HEW types

HEW types

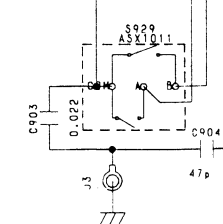
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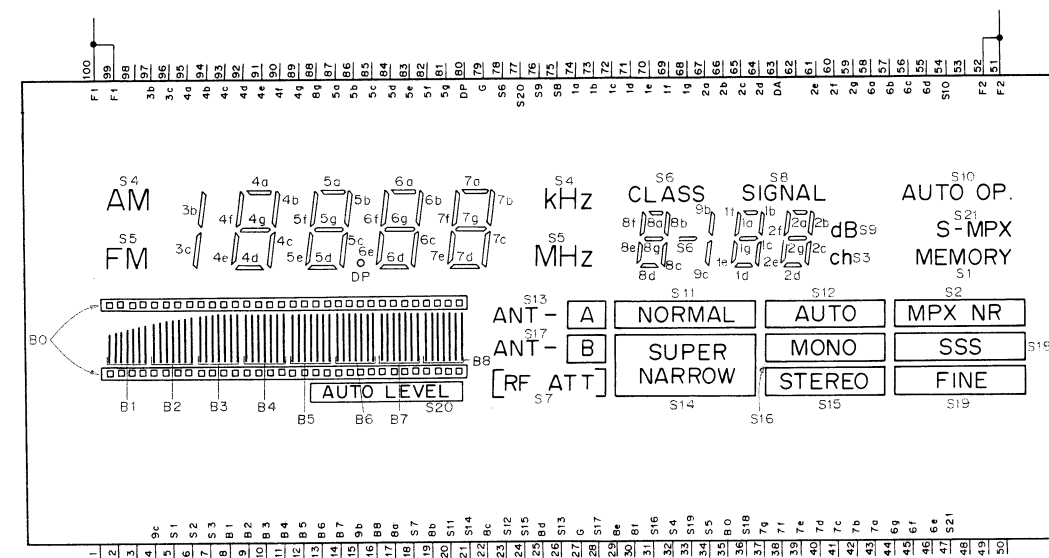
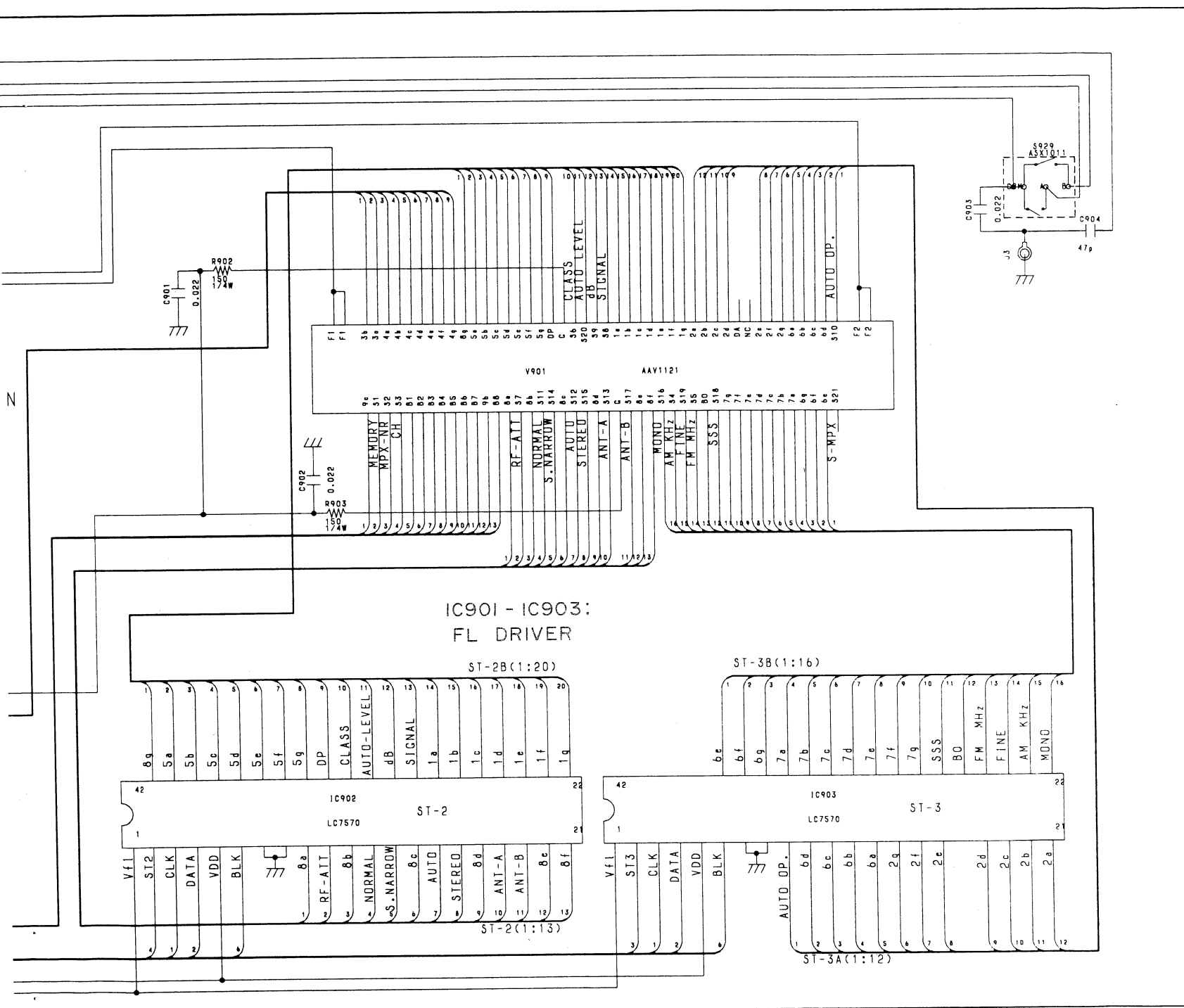


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[illegible]



3. PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "●" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω → 56 × 10<sup>1</sup> → 561 ..... RD1/8PM561J

47kΩ → 47 × 10<sup>3</sup> → 473 ..... RD1/4PS473J

0.5Ω → 0R5 ..... RN2H0R5K

1Ω → 010 ..... RS1P010K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ → 562 × 10<sup>1</sup> → 5621 ..... RN1/4PC5621F

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
LIST OF ASSEMBLIES					
● MAIN assembly		AWZ4098	Q209,401	N-FET	2SK246
NSP POWER assembly		AWZ4100	Q402	TRANSISTOR	2SA1115
			Q403	TRANSISTOR	2SC2603
			Q501	N-FET	2SK246
DISPLAY assembly		AWP1041	Q502	TRANSISTOR	2SA1115
MAIN ASSEMBLY					
SEMICONDUCTORS					
IC101-103	AMPLIFIER IC	TA7060AP	Q503	TRANSISTOR	2SC2603
IC201,202	FM IC	PA5008	Q504	TRANSISTOR	XDA124ES
IC203,204	OP-AMP IC	NJM4558DXP	Q505	TRANSISTOR	2SC2603
IC301	FM-NR	PA0042	Q506,507	N-FET	2SK246
IC302	GEQ IC	LA3607	Q701	N-FET	2SK246
IC303-306	OP-AMP IC	UPC4570HA	Q702	TRANSISTOR	2SB834
IC401	PLL SYNTHESIZER IC	CX-7925B	Q703,704	TRANSISTOR	2SC2603
IC501	AM IC	LA1247	Q705	TRANSISTOR	XDC143ES
IC502	LOGIC IC	UPD4066BC	Q706	TRANSISTOR	2SA1115
IC601	MPX IC	PA5007	Q707	TRANSISTOR	XDC124ES
IC701	REGULATOR IC	NJM78M56FAS	Q708	TRANSISTOR	2SC2603
IC702	IC PROTECTOR	ICP-N25	Q709	TRANSISTOR	2SA1115
IC801	TUNER CONTROL μ-COM	PD5187A	Q710	TRANSISTOR	XDC124ES
Q1,2	TRANSISTOR	XDA124ES	Q711	TRANSISTOR	2SA1115
Q3	TRANSISTOR	XDC124ES	Q712-715	TRANSISTOR	2SC2878
Q5	TRANSISTOR	2SC2603	Q716	TRANSISTOR	XDA143ES
Q6,7	TRANSISTOR	XDC124ES	Q717	TRANSISTOR	XDC124ES
Q8-10	FET	3SK122	Q718	TRANSISTOR	2SA1115
Q11	MOS-FET	2SK241	Q801	TRANSISTOR	2SC2603
Q12	N-FET	2SK161	Q802	TRANSISTOR	XDC124ES
Q13	TRANSISTOR	2SC2668	Q803	TRANSISTOR	2SC2603
Q101,102	TRANSISTOR	XDA143ES	D1-7		1SV154
Q103	MOS-FET	2SK241	D8	VARI-CAP DIODE	KV1320A-4
Q104	TRANSISTOR	2SC2668	D9,10		1SV154
Q105	MOS-FET	2SK241	D101-104	DIODE	1SS85
Q106,107	TRANSISTOR	2SC2668	D105,106	DIODE	2-1K261
Q201,202	N-FET	2SK246	D107-110	DIODE	1SS85
Q203-205	N-FET	2SK117	D111-113	DIODE	MA700A
Q206,207	N-FET	2SK246	D115,116	DIODE	2-1K261
Q208	TRANSISTOR	2SC2603	D201,202	DIODE	1SS252
			D203	VARI-CAP DIODE	SVC321SP-AS
			D204	ZENER DIODE	RD4.7ESB
			D401-404	DIODE	1SS252
			D405	ZENER DIODE	RD7.5ESB
			D501,502	VARI-CAP DIODE	SVC321C2

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.	Mark No.
D503	DIODE	1SS252	C29	CERAMIC CAPACITOR	CKDYX103M25	C223
D504	ZENER DIODE	RD5.1ESB	C31,32	CERAMIC CAPACITOR	CCDSH030C50	C224,4
D701-710	DIODE	S5566	C33	CERAMIC CAPACITOR	CKDYX103M25	C226
D711,712	ZENER DIODE	RD12ESB	C34-36	CERAMIC CAPACITOR	CCDCH030C50	C227-
D713,714	ZENER DIODE	HZS9A3L	C37,38	CERAMIC CAPACITOR	CCDCH101J50	C230
D715	DIODE	1SS252	C39	CERAMIC CAPACITOR	CKDYX473M25	C231
D716	ZENER DIODE	HZS6C2L	C41	CERAMIC CAPACITOR	CCDCH030C50	C232
D717	DIODE	1SS252	C42	CERAMIC CAPACITOR	CKDYX103M25	C233
D718	ZENER DIODE	RD5.1ESB1	C43	CERAMIC CAPACITOR	CCDSH330J50	C234
D719	ZENER DIODE	HZS9A3L	C44	CERAMIC CAPACITOR	CCDSH120J50	C235
D720	DIODE	1SS252	C45	CERAMIC CAPACITOR	CCDCH010C50	C236
D721	ZENER DIODE	RD10ESB	C46	CERAMIC CAPACITOR	CCDTH080D50	C237
D722	ZENER DIODE	RD2.2ESB	C47	CERAMIC CAPACITOR	CCDCH330J50	C238
D801-810	DIODE	1SS252	C48	CERAMIC CAPACITOR	CCDCH150J50	C239
			C49,50	CERAMIC CAPACITOR	CKDYX103M25	C240,4
COILS, FILTERS						
L1-3	AXIAL INDUCTOR	LAU010K	C54	CERAMIC CAPACITOR	CKDYB102K50	C242
L5	COIL	ATC-244	C59	CERAMIC CAPACITOR	CKDYX103M25	C301
L6	AXIAL INDUCTOR	LAU010K	C64	CERAMIC CAPACITOR	CKDYB102K50	C303,3
L11	COIL	ATC-077	C65,66	CERAMIC CAPACITOR	CKDYX103M25	C305
L12-14	AXIAL INDUCTOR	LAU010K	C67	CERAMIC CAPACITOR	CKDYB102K50	C306
L15	COIL	ATH-093	C69	CERAMIC CAPACITOR	CKDYX103M25	C307
L16-38	AXIAL INDUCTOR	LAU010K	C73-76	CERAMIC CAPACITOR	CKDYB102K50	C308
L101-103	AXIAL INDUCTOR	LAU220K	C78	CERAMIC CAPACITOR	CKDYX473M25	C309
L104	AXIAL INDUCTOR	LAU100K	C79-83	CERAMIC CAPACITOR	CKDYB102K50	C310
L201-203	AXIAL INDUCTOR	LAU220K	C84	CERAMIC CAPACITOR	CKDYX473M25	C311
L205,206	AXIAL INDUCTOR	LAU221K	C86,87	CERAMIC CAPACITOR	CKDYB102K50	C312
L207,401	AXIAL INDUCTOR	LAU010K	C88	CERAMIC CAPACITOR	CKDYX473M25	C313
L501	AXIAL INDUCTOR	LAU470K	C89,90	CERAMIC CAPACITOR	CKDYB102K50	C314
L502	IF TRANSFORMER	ATB-073	C101-107	CERAMIC CAPACITOR	CKDYX473M25	C315
L601	COIL	ATM1003	C108	CERAMIC CAPACITOR	CKDYX103M25	C316,3
L602-604	AXIAL INDUCTOR	LAU010K	C109-112	CERAMIC CAPACITOR	CKDYX473M25	C318
L801	AXIAL INDUCTOR	LAU220K	C114-117	CERAMIC CAPACITOR	CKDYX473M25	C319
L802	AXIAL INDUCTOR	LAU010K	C118-120	CERAMIC CAPACITOR	CKCYF103Z50	C320
F101-104	CERAMIC FILTER	ATF1080	C121	CERAMIC CAPACITOR	CKDYX473M25	C321
F105,106	CERAMIC FILTER	ATF1079	C122	ELECT. CAPACITOR	CEAS010M50	C322
F501	CERAMIC FILTER	ATF1077	C125	CERAMIC CAPACITOR	CKDYX103M25	C323
F502	CERAMIC FILTER	ATF1004	C127	CERAMIC CAPACITOR	CKDYX473M25	C324
T1	COIL	ATC-204	C128	ELECT. CAPACITOR	CEAS010M50	C325
T2	RF TRANSFORMER	ATC-257	C129	CERAMIC CAPACITOR	CKDYX473M25	C326
T3	IF TRANSFORMER	ATE-066	C131	CERAMIC CAPACITOR	CKDYX473M25	C327
T4	RF TRANSFORMER	ATC-218	C201,202	CERAMIC CAPACITOR	CKDYX473M25	C328
T101-104	IF TRANSFORMER	ATE-063	C203	ELECT. CAPACITOR	CEEA102M16	C329
T201	IF TRANSFORMER	ATE-068	C204	CERAMIC CAPACITOR	CKDYX473M25	C330
T204	IF TRANSFORMER	ATE1010	C205	ELECT. CAPACITOR	CEAS010M50	C331
T501	COIL	ATB-087	C206	CERAMIC CAPACITOR	CKCYF223Z50	C332
T502	IF TRANSFORMER	ATB1002	C207	ELECT. CAPACITOR	CEAS010M50	C333
CAPACITORS						
C1-4	CERAMIC CAPACITOR	CKDYX103M25	C210,211	CERAMIC CAPACITOR	CCCSL181J50	C334
C5-15	CERAMIC CAPACITOR	CKDYB102K50	C212	ELECT. CAPACITOR	CEAS4R7M50	C335-
C16	CERAMIC CAPACITOR	CKDYX473M25	C213	CERAMIC CAPACITOR	CKDYX473M16	C339,3
C17,18	CERAMIC CAPACITOR	CKDYB102K50	C214	ELECT. CAPACITOR	CEEA471M25	C341-
C20,21	CERAMIC CAPACITOR	CCDCH150J50	C215	ELECT. CAPACITOR	CEAS010M50	C345,3
C22	CERAMIC CAPACITOR	CCDSH030C50	C216	ELECT. CAPACITOR	CEAS220M50	
C23	CERAMIC CAPACITOR	CCDCH050C50	C217	ELECT. CAPACITOR	CEAS010M50	C347,3
C24,25	CERAMIC CAPACITOR	CKDYX103M25	C218	CERAMIC CAPACITOR	CCCCH150J50	C401
C26	CERAMIC CAPACITOR	CKDYX473M25	C219	CERAMIC CAPACITOR	CCCCH180J50	C402
C28	CERAMIC CAPACITOR	CCDCH030C50	C220,221	CERAMIC CAPACITOR	CCCCH101J50	C403
			C222	ELECT. CAPACITOR	CEANP100M35	C405

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
D503	DIODE	1SS252	C29	CERAMIC CAPACITOR	CKDYX103M25
D504	ZENER DIODE	RD5.1ESB	C31,32	CERAMIC CAPACITOR	CCDSH030C50
D701-710	DIODE	S5566	C33	CERAMIC CAPACITOR	CKDYX103M25
D711,712	ZENER DIODE	RD12ESB	C34-36	CERAMIC CAPACITOR	CCDCH030C50
D713,714	ZENER DIODE	HZS9A3L	C37,38	CERAMIC CAPACITOR	CCDCH101J50
D715	DIODE	1SS252	C39	CERAMIC CAPACITOR	CKDYX473M25
D716	ZENER DIODE	HZS6C2L	C41	CERAMIC CAPACITOR	CCDCH030C50
D717	DIODE	1SS252	C42	CERAMIC CAPACITOR	CKDYX103M25
D718	ZENER DIODE	RD5.1ESB1	C43	CERAMIC CAPACITOR	CCDSH330J50
D719	ZENER DIODE	HZS9A3L	C44	CERAMIC CAPACITOR	CCDSH120J50
D720	DIODE	1SS252	C45	CERAMIC CAPACITOR	CCDCH010C50
D721	ZENER DIODE	RD10ESB	C46	CERAMIC CAPACITOR	CCDTH080D50
D722	ZENER DIODE	RD2.2ESB	C47	CERAMIC CAPACITOR	CCDCH330J50
D801-810	DIODE	1SS252	C48	CERAMIC CAPACITOR	CCDCH150J50
			C49,50	CERAMIC CAPACITOR	CKDYX103M25
<b>COILS, FILTERS</b>					
L1-3	AXIAL INDUCTOR	LAU010K	C54	CERAMIC CAPACITOR	CKDYB102K50
L5	COIL	ATC-244	C59	CERAMIC CAPACITOR	CKDYX103M25
L6	AXIAL INDUCTOR	LAU010K	C64	CERAMIC CAPACITOR	CKDYB102K50
L11	COIL	ATC-077	C65,66	CERAMIC CAPACITOR	CKDYX103M25
L12-14	AXIAL INDUCTOR	LAU010K	C67	CERAMIC CAPACITOR	CKDYB102K50
L15	COIL	ATH-093	C69	CERAMIC CAPACITOR	CKDYX103M25
L16-38	AXIAL INDUCTOR	LAU010K	C73-76	CERAMIC CAPACITOR	CKDYB102K50
L101-103	AXIAL INDUCTOR	LAU220K	C78	CERAMIC CAPACITOR	CKDYX473M25
L104	AXIAL INDUCTOR	LAU100K	C79-83	CERAMIC CAPACITOR	CKDYB102K50
L201-203	AXIAL INDUCTOR	LAU220K	C84	CERAMIC CAPACITOR	CKDYX473M25
L205,206	AXIAL INDUCTOR	LAU221K	C86,87	CERAMIC CAPACITOR	CKDYB102K50
L207,401	AXIAL INDUCTOR	LAU010K	C88	CERAMIC CAPACITOR	CKDYX473M25
L501	AXIAL INDUCTOR	LAU470K	C89,90	CERAMIC CAPACITOR	CKDYB102K50
L502	IF TRANSFORMER	ATB-073	C101-107	CERAMIC CAPACITOR	CKDYX473M25
L601	COIL	ATM1003			
L602-604	AXIAL INDUCTOR	LAU010K	C108	CERAMIC CAPACITOR	CKDYX103M25
L801	AXIAL INDUCTOR	LAU220K	C109-112	CERAMIC CAPACITOR	CKDYX473M25
L802	AXIAL INDUCTOR	LAU010K	C114-117	CERAMIC CAPACITOR	CKDYX473M25
F101-104	CERAMIC FILTER	ATF1080	C118-120	CERAMIC CAPACITOR	CKCYF103Z50
F105,106	CERAMIC FILTER	ATF1079	C121	CERAMIC CAPACITOR	CKDYX473M25
F501	CERAMIC FILTER	ATF1077	C122	ELECT. CAPACITOR	CEAS010M50
F502	CERAMIC FILTER	ATF1004	C125	CERAMIC CAPACITOR	CKDYX103M25
T1	COIL	ATC-204	C127	CERAMIC CAPACITOR	CKDYX473M25
T2	RF TRANSFORMER	ATC-257	C128	ELECT. CAPACITOR	CEAS010M50
T3	IF TRANSFORMER	ATE-066	C129	CERAMIC CAPACITOR	CKDYX473M25
T4	RF TRANSFORMER	ATC-218	C131	CERAMIC CAPACITOR	CKDYX473M25
T101-104	IF TRANSFORMER	ATE-063	C201,202	CERAMIC CAPACITOR	CKDYX473M25
T201	IF TRANSFORMER	ATE-068	C203	ELECT. CAPACITOR	CEEA102M16
T204	IF TRANSFORMER	ATE1010	C204	CERAMIC CAPACITOR	CKDYX473M25
T501	COIL	ATB-087	C205	ELECT. CAPACITOR	CEAS010M50
T502	IF TRANSFORMER	ATB1002	C206	CERAMIC CAPACITOR	CKCYF223Z50
<b>CAPACITORS</b>					
C1-4	CERAMIC CAPACITOR	CKDYX103M25	C207	ELECT. CAPACITOR	CEAS010M50
C5-15	CERAMIC CAPACITOR	CKDYB102K50	C208	CERAMIC CAPACITOR	CKCYF223Z50
C16	CERAMIC CAPACITOR	CKDYX473M25	C209	ELECT. CAPACITOR	CEAS100M50
C17,18	CERAMIC CAPACITOR	CKDYB102K50	C210,211	CERAMIC CAPACITOR	CCCSL181J50
C20,21	CERAMIC CAPACITOR	CCDCH150J50			
C22	CERAMIC CAPACITOR	CCDSH030C50	C212	ELECT. CAPACITOR	CEAS4R7M50
C23	CERAMIC CAPACITOR	CCDCH050C50	C213	CERAMIC CAPACITOR	CKDYX473M16
C24,25	CERAMIC CAPACITOR	CKDYX103M25	C214	ELECT. CAPACITOR	CEEA471M25
C26	CERAMIC CAPACITOR	CKDYX473M25	C215	ELECT. CAPACITOR	CEAS010M50
C28	CERAMIC CAPACITOR	CCDCH030C50	C216	ELECT. CAPACITOR	CEAS220M50
			C217	ELECT. CAPACITOR	CEAS010M50
			C218	CERAMIC CAPACITOR	CCCCH150J50
			C219	CERAMIC CAPACITOR	CCCCH180J50
			C220,221	CERAMIC CAPACITOR	CCCCH101J50
			C222	ELECT. CAPACITOR	CEANP100M35

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
C223	CERAMIC CAPACITOR	CKDYX103M25	C411	POLYESTER CAPACITOR	CQMXA103J100
C224,225	CERAMIC CAPACITOR	CKDYX473M25	C412	ELECTROLYTIC CAPACIT	CEANLR47M50
C226	ELECT. CAPACITOR	CEAS101M25	C413	ELECT. CAPACITOR	CEAS2R2M50
C227-229	CERAMIC CAPACITOR	CKDYX473M25	C420	CERAMIC CAPACITOR	CKDYF473Z50
C230	CERAMIC CAPACITOR	CCCCH680J50	C501	CERAMIC CAPACITOR	CKDYX223M25
C231	CERAMIC CAPACITOR	CCCCH220J50	C502	CERAMIC CAPACITOR	CCDUJ100D50
C232	ELECT. CAPACITOR	CEAS010M50	C503	CERAMIC CAPACITOR	CKDYX103M25
C233	ELECT. CAPACITOR	CEANP100M35	C504	PL.STYRENE CAPACITOR	CQSA471J50
C234	ELECT. CAPACITOR	CEAS470M25	C505,506	CERAMIC CAPACITOR	CKDYX223M25
C235	ELECT. CAPACITOR	CEAS471M10	C507	ELECT. CAPACITOR	CEAS100M50
C236	ELECT. CAPACITOR	CEAS470M25	C508	CERAMIC CAPACITOR	CKPUYF223Z25
C237	ELECT. CAPACITOR	CEAS010M50	C509	CERAMIC CAPACITOR	CKPUYF103Z25
C238	CERAMIC CAPACITOR	CKDYX473M25	C510	CERAMIC CAPACITOR	CKDYX103M25
C239	CERAMIC CAPACITOR	CKCYX103M25	C511	CERAMIC CAPACITOR	CCDSL101J50
C240,241	CERAMIC CAPACITOR	CKCYX473M25	C512,513	ELECT. CAPACITOR	CEAS4R7M50
C242	ELECT. CAPACITOR	CEAS220M50			
C301	CERAMIC CAPACITOR	CKCYX473M25	C514	MYLAR FILM CAPACITOR	CQMA103J50
C303,304	ELECT. CAPACITOR	CEANP100M25	C515	CERAMIC CAPACITOR	CKDYX223M25
C305	ELECT. CAPACITOR	CEANP100M35	C516	ELECT. CAPACITOR	CEAS330M35
C306	ELECT. CAPACITOR	CEAS4R7M50	C517	ELECT. CAPACITOR	CEAS010M50
C307	ELECT. CAPACITOR	CEAS2R2M50	C518	MYLAR FILM CAPACITOR	CQMA393J50
C308	ELECT. CAPACITOR	CEAS1R5M50	C519	ELECT. CAPACITOR	CEAS010M50
C309	ELECT. CAPACITOR	CEAS010M50	C520	CERAMIC CAPACITOR	CKDYX223M25
C310	ELECT. CAPACITOR	CEASR68M50	C521	ELECT. CAPACITOR	CEAS330M35
C311	ELECT. CAPACITOR	CEASR47M50	C522	CERAMIC CAPACITOR	CKDYB102K50
C312	ELECT. CAPACITOR	CEASR22M50	C523	CERAMIC CAPACITOR	CKDYX223M25
C313	ELECT. CAPACITOR	CEASR15M50	C524	CERAMIC CAPACITOR	CKPUYB102K50
C314	ELECT. CAPACITOR	CEEA471M25	C525	CERAMIC CAPACITOR	CKPUYF223Z25
C315	CERAMIC CAPACITOR	CKCYX473M25	C526	CERAMIC CAPACITOR	CKPUYF103Z25
C316,317	ELECT. CAPACITOR	CEANP100M25	C527	ELECT. CAPACITOR	CEAS330M35
C318	MYLAR FILM CAPACITOR	CQMA472K50	C528	CERAMIC CAPACITOR	CKPUYF103Z25
C319	MYLAR FILM CAPACITOR	CQMA821K50	C529	ELECT. CAPACITOR	CEAS0R1M50
C320	MYLAR FILM CAPACITOR	CQMA822K50	C531,532	CERAMIC CAPACITOR	CKDYX103M25
C321	MYLAR FILM CAPACITOR	CQMA152K50	C601,602	PL.STYRENE CAPACITOR	CQSA152J160
C322	MYLAR FILM CAPACITOR	CQMA123K50	C603	ELECT. CAPACITOR	CEEA471M25
C323	MYLAR FILM CAPACITOR	CQMA272K50	C604	ELECT. CAPACITOR	CEAS470M25
C324	MYLAR FILM CAPACITOR	CQMA223K50	C605	CERAMIC CAPACITOR	CKCYX473M25
C325	MYLAR FILM CAPACITOR	CQMA472K50	C606	ELECT. CAPACITOR	CEEA102M16
C326	MYLAR FILM CAPACITOR	CQMA333K50	C607	ELECT. CAPACITOR	CEAS1R5M50
C327	MYLAR FILM CAPACITOR	CQMA103K50	C608	ELECT. CAPACITOR	CEAS100M50
C328	ELECT. CAPACITOR	CEAS220M50	C609	CKA (390P/50V)	ACG-023
C329	MYLAR FILM CAPACITOR	CQMA563K50	C610	ELECT. CAPACITOR	CEAS6R8M50
C330	MYLAR FILM CAPACITOR	CQMA104K50	C611	ELECT. CAPACITOR	CEAS100M50
C331	MYLAR FILM CAPACITOR	CQMA273K50	C612	PL.PROPYTENE CAPACIT	CQPA682G100
C332	MYLAR FILM CAPACITOR	CQMA823K50	C613	ELECT. CAPACITOR	CEAS100M50
C333	MYLAR FILM CAPACITOR	CQMA153K50	C614	ELECT. CAPACITOR	CEAS330M35
C334	MYLAR FILM CAPACITOR	CQMA563K50	C615,616	ELECT. CAPACITOR	CEEA470M25
C335-338	PL.STYRENE CAPACITOR	CQSA103J50	C617,618	POLYESTER CAPACITOR	CQMXA682J100
C339,340	CERAMIC CAPACITOR	CKCYX473M25	C620,621	CERAMIC CAPACITOR	CKDYB152K50
C341-344	PL.STYRENE CAPACITOR	CQSA103J50	C701	ELECT. CAPACITOR	CEAS470M50
C345,346	POLYESTER CAPACITOR	CQMXA103J100	C702	ELECT. CAPACITOR	CEHAQ221M63
C347,348	CERAMIC CAPACITOR	CKCYX473M25	C703	ELECT. CAPACITOR	CEHAQ221M50
C401	CERAMIC CAPACITOR	CKDYX473M16	C704	ELECT. CAPACITOR	CEAS471M50
C402	CERAMIC CAPACITOR	CCDCH150J50	C705	ELECT. CAPACITOR	CEHAQ332M35
C403	CERAMIC CAPACITOR	CKDYX103M25	C706	CERAMIC CAPACITOR	CKCYX473M25
C405	ELECT. CAPACITOR	CEAS101M10	C707	ELECT. CAPACITOR	CEHAQ101M25
C406	CERAMIC CAPACITOR	CKDYX103M25	C708	ELECT. CAPACITOR	CEEA101M25
C407	CERAMIC CAPACITOR	CCDCH150J50	C709,710	ELECT. CAPACITOR	CEAS101M25
C408	CERAMIC CAPACITOR	CCDCH180J50	C711	ELECT. CAPACITOR	CEAS471M25
C409	ELECT. CAPACITOR	CEAS470M25	C712	ELECT. CAPACITOR	CEHAQ222M25
C410	ELECT. CAPACITOR	CEAS101M35	C713	ELECT. CAPACITOR	CEAS470M25

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
C714	ELECT. CAPACITOR	CEHAQ101M25	R713	METAL OXIDE RESISTOR	RS3LMF680J
C715	ELECT. CAPACITOR	CEAS101M25	R714	CARBONFILM RESISTOR	RD1/2PM271J
C716	CERAMIC CAPACITOR	CCCCH101J50	R716-719	CARBON FILM RESISTOR	RD1/4PM010J
C717	CKA (0.01/AC250V)	ACG1005	R724	METAL OXIDE RESISTOR	RS3LMF680J
C719	ELECT. CAPACITOR	CEAS101M25	R807	RESISTOR ARRAY (22K)	RA6T223J
C801	CERAMIC CAPACITOR	CCCSL101J50	R820	CARBON FILM RESISTOR	RD1/4PM101J
C802,803	CERAMIC CAPACITOR	CKCYF103Z50	R826	RESISTOR ARRAY(22K)	RA8T223J
C804	CERAMIC CAPACITOR	CKDYX473M25	Other resistors		RD1/8PM□□□J
C805	ELECT. CAPACITOR	CEAS100M50	<b>OTHERS</b>		
C806	CERAMIC CAPACITOR	CCCSL101J50	TC1	CERAMIC TRIMMER	ACM-018
C807	CERAMIC CAPACITOR	CKCYX223M25	TC2	CERAMIC TRIMMER	ACM-018
C808	CAPACITOR(0.047/5.5)	ACH1135	TC3	CERAMIC TRIMMER	ACM-018
C809	ELECT. CAPACITOR	CEAS470M25	TC501	CERAMIC TRIMMER	ACM-019
C810	CERAMIC CAPACITOR	CKCYX223M25	TC502	CERAMIC TRIMMER	ACM-019
C812	CERAMIC CAPACITOR	CKDYX473M25	TH101	THERMISTOR	TH103-2
C813	CERAMIC CAPACITOR	CCDSL101J50	TH102	THERMISTOR	TH102-2
<b>RESISTORS</b>			TH201	THERMISTOR	TH103-2
VR101	VR(47K)	ACP1045	X401	CRYSTAL RESO.(7.2M)	ASS1005
VR201	VR(4.7K)	ACP1042	X501	CERAMIC RESO.(450K)	ATF1027
VR202	VR(10K)	ACP1043	X502	CERAMIC RESO.(450K)	ATF1027
VR203	VR(22K)	ACP1044	X801	CERAMIC RESO.(7.7M)	ASS1055
VR204	VR(10K)	ACP1043	CN1	CONNECTOR(15P)	KPE15
VR205	VR(220)	ACP1038	CN2	CONNECTOR(12P)	KPE12
VR206,207	VR(22K)	ACP1044	JACK		AKN-207
VR208-210	VR(10K)	ACP1043	PIN JACK(2P)		AKB1039
VR301	VR(47K)	ACP1045	SCREW (STEEL)		ABA1009
VR601	VR(2.2K)	ACP1041	SOCKET		AKX1034
VR602	VR(22K)	ACP1044	TERMINAL 2-P		AKE-060
R4	CARBON FILM RESISTOR	RD1/4PM301J	<b>POWER ASSEMBLY</b>		
R10	CARBON FILM RESISTOR	RD1/4PM301J	<b>COILS, FILTERS</b>		
R23	CARBONFILM RESISTOR	RD1/8PM4R7J	△ L701	FILTER	ATF1117
R24	CARBON FILM RESISTOR	RD1/4PM151J	△ T701	POWER TRANSFORMER	ATT1189
R32	CARBON FILM RESISTOR	RD1/4PM151J	<b>CAPACITORS</b>		
R102	CARBON FILM RESISTOR	RD1/4PM151J	△ C718	CKA (0.01/AC400V)	ACG1002
R106	CARBON FILM RESISTOR	RD1/4PM151J	<b>DISPLAY ASSEMBLY</b>		
R113	CARBON FILM RESISTOR	RD1/4PM151J	<b>SEMICONDUCTORS</b>		
R129	CARBON FILM RESISTOR	RD1/4PM151J	IC901-903	FL STATIC DRIVER IC	LC7570
R135	CARBON FILM RESISTOR	RD1/4PM151J	D901-904	DIODE	1SS252
R214-217	CARBON FILM RESISTOR	RDR1/4PM223J	D905	LED(RED)	AEL1065
R227	CARBON FILM RESISTOR	RDR1/4PM331J	<b>SWITCHES</b>		
R228-230	CARBON FILM RESISTOR	RDR1/4PM□□□J	S901-928	SWITCH	ASG1034
R233-236	CARBON FILM RESISTOR	RDR1/4PM□□□J	S929	ROTARY ENCODER	ASX1011
R303,304	CARBON FILM RESISTOR	RDR1/4PM103J	<b>CAPACITORS</b>		
R305,306	METALFILM RESISTOR	RN1/4PC7870F	C901-903	CERAMIC CAPACITOR	CKPUYF223Z25
R307,308	CARBON FILM RESISTOR	RDR1/4PM511J	C904	AXIAL CAPACITOR	CCPUSL470J50
R309,310	METALFILM RESISTOR	RN1/4PC1151F	<b>RESISTORS</b>		
R311,312	CARBON FILM RESISTOR	RDR1/4PM271J	R901	CARBONFILM RESISTOR	RD1/8PM271J
R313,314	METALFILM RESISTOR	RN1/4PC1021F	R902,903	CARBON FILM RESISTOR	RD1/4PM151J
R315-326	CARBON FILM RESISTOR	RDR1/4PM□□□J	R904	CARBONFILM RESISTOR	RD1/8PM103J
R514	CARBON FILM RESISTOR	RD1/4PM201J	<b>OTHERS</b>		
R601-606	CARBON FILM RESISTOR	RDR1/4PM□□□J	V901	FL TUBE	AAV1121
R608	METALFILM RESISTOR	RN1/4PC5601F			
R612-615	CARBON FILM RESISTOR	RDR1/4PM□□□J			
R701	METAL OXIDE RESISTOR	RS3LMF471J			
R702	CARBONFILM RESISTOR	RD1/2PM471J			
R703	CARBON FILM RESISTOR	RD1/4PM681J			
R712	CARBON FILM RESISTOR	RD1/4PM222J			

## 4. ADJUSTMENTS

### PREPARATIONS

- To set the test mode, short TP801 and TP802 (GND) then release the short.
- Set TC1 - TC3 and VR202 to their mechanical centers.

### FM tuner adjustment

- Connect as shown in Fig.1
- Set the function to FM.

Step No.	Adjustment	FM SG (1 kHz ± 75 kHz dev).			F-701 reception frequency display	Adjustment	
		Frequency(MHz)	Modulation	Level(dBμV) [Load]		Location	Specification
1	Front-end VT adjustment	NO INPUT SIGNAL			108MHz NORMAL or SUPER NARROW	L11	Adjust so that the voltage between TP1 and ground is 21.0 ± 0.1V.
2					87.5MHz NORMAL or SUPER NARROW	—	Confirm that the voltage between TP1 and ground is 7.6 ± 0.5V
3	Front-end sensitivity-up adjustment	90.0	MONO	Weak input	90.0 MHz NORMAL	L5, T1, T2	Adjust for the maximum voltage between TP210 and ground. Repeat these two steps until both specifications are satisfied. (*1)
4		106.0	MONO	Weak input	106.0 MHz NORMAL	TC1 – TC3	
5	IF stage sensitivity-up adjustment	98.0	MONO	Weak input	98.0 MHz NARROW	T3, T101 – T103	Adjust so that voltage between TP210 and ground become maximum.
6					98.0MHz SUPER NARROW	T104	
7	Detector T meter adjustment (1)	98.0	MONO	54	98.0 MHz NORMAL	T201 – B	After setting the voltage between TP201 and TP202 to 0±100mV, check that the modulated signals are output from the output terminal.
8	Detector T meter adjustment (2)					T204	After setting the voltage between TP204 and TP205 to 0±100mV, check that the modulated signals are output from the output terminal.
9	Monaural distortion adjustment (NORMAL)	98.0	MONO	54	98.0MHz NORMAL	T201 – A VR201 (T201 – B)	Short TP204 and TP208, adjust so as to minimize distortion. If this cannot be achieved, turn T201 – B, voltage between TP201 and TP202 within 0±100mV, then repeat the above adjustment.
10	Mono third-harmonic distortion adjustment (NORMAL)	98.0	MONO	54	98.0MHz NORMAL	VR208	Adjust VR208 so that AC voltage at TP209 becomes minimum (less than 80 mV).
11						T204	TP204, TP208 open : Adjust T204 so that the distortion becomes minimum.
12						VR209	Adjust VR209 so that the distortion (third-harmonic) becomes minimum.
13	Repeat steps 11 and 12 above so that the distortion becomes minimum (less than 0.2%).						
14	Mono third-harmonic distortion adjustment (SUPER NARROW)	98.0	MONO	54	98.0MHz SUPER NARROW	VR210	Adjust VR210 so that the distortion becomes minimum (less than 0.4%).
15	SUB balance adjustment	98.0	MONO	54	98.0MHz NORMAL	VR205	Adjust to minimize the output at TP203 (AC voltage).

Step No.	Adjustment	FM SG (1 kHz $\pm$ 75 kHz dev).			F-701 reception frequency display	Adjustment	
		Frequency(MHz)	Modulation	Level(dB $\mu$ V) [Load]		Location	Specification
16	VCO adjustment	108	OFF	54	108.0 MHz NORMAL or SUPER NARROW	VR601	Adjust so that the output at TP601 is 38 kHz $\pm$ 100 Hz
17	Pilot cancel adjustment	107(*2)	PILOT ONLY	54	107MHz NORMAL	VR602	Adjust so as to minimize the output terminal AC voltage.
18	Stereo distortion adjustment (NORMAL)	89(*2)	L - ONLY	60	89 MHz NORMAL	VR203	Adjust so as to minimize distortion. If this cannot be achieved, try turning T3, T101, T102 and T103 within $\pm 90^\circ$ .
19	Stereo distortion adjustment (SUPER NARROW)	89.0*(2)	L - ONLY	60	89.0 MHz SUPER NARROW	VR204	Adjust so as to minimize distortion. If this cannot be achieved, try turning T104 within $\pm 90^\circ$ (check step 18 after this).
20	Separation adjustment	89(*2)	R - ONLY	60	89 MHz NORMAL	VR206	Adjust for the maximum R $\rightarrow$ L separation.
21			L - ONLY			VR207	Adjust for the maximum L $\rightarrow$ R separation.
22	Noise reduction separation adjustment	89 (*2)	STEREO	60	89MHz NORMAL MPX NR ON	VR301	Adjust VR301 so that the output level of the output terminal ranges from +1 dB to 1.5 dB when the MPX NR is ON compared with when the MPX NR is OFF.
23	S meter adjustment	89	MONO	50	89.0MHz NORMAL	VR202	Adjust the indication of the S meter to 50 dB $\mu$ .
24				75		VR101	Adjust the indication of the S meter to 75 dB $\mu$ .

(\*1) The adjustments for the HEWZI model end with Step 4.

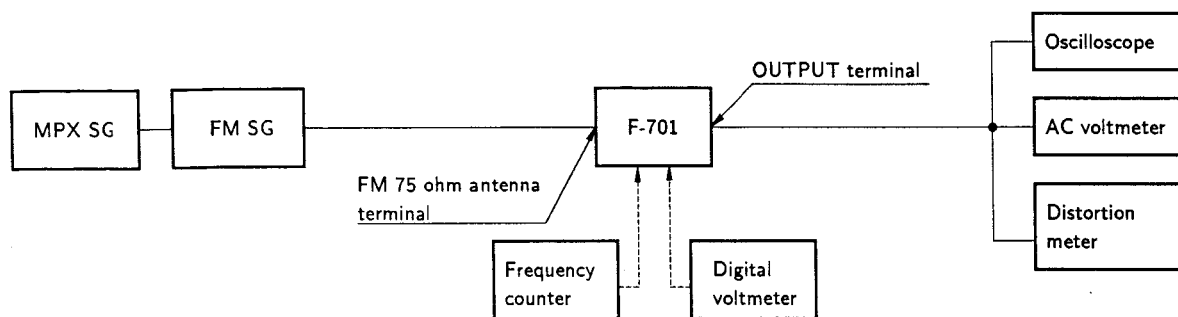
(\*2) Stereo modulation : Main 1 kHz L + R  $\pm$  68.25 kHz

Pilot 19 kHz  $\pm$  6.75 kHz

### AM tuner adjustment

- Connect as shown in Fig. 2.
- Set TC501 and TC502 to their mechanical centers.
- Step 1 and 2 should be carried out in the SUPER NARROW or NORMAL mode, and step 3 to 5 in the SUPER NARROW mode.

Step No.	Adjustment	AM SG (400kHz 30% modulation)		F-701 reception frequency display	Adjustment	
		Frequency (kHz)	Level(dB $\mu$ V/m)		Location	Specification
1	Front-end VT adjustment	NO INPUT SIGNAL		531 kHz	L502	Adjust so that the voltage between TP1 and ground is 2.0 $\pm$ 0.2V.
2				1602 kHz	TC502	Adjust so that the voltage between TP1 and ground is 16.0 $\pm$ 0.2V.
3	Front-end sensitivity-up adjustment	603	Weak input	603 kHz	T501	Adjust so as to maximize the voltage between TP501 and ground.
4		1395	Weak input	1395 kHz	TC501	
5	Repeat steps 3 and 4 until optimum adjustment is obtained.					



**Fig. 1 FM Tuner Connection**

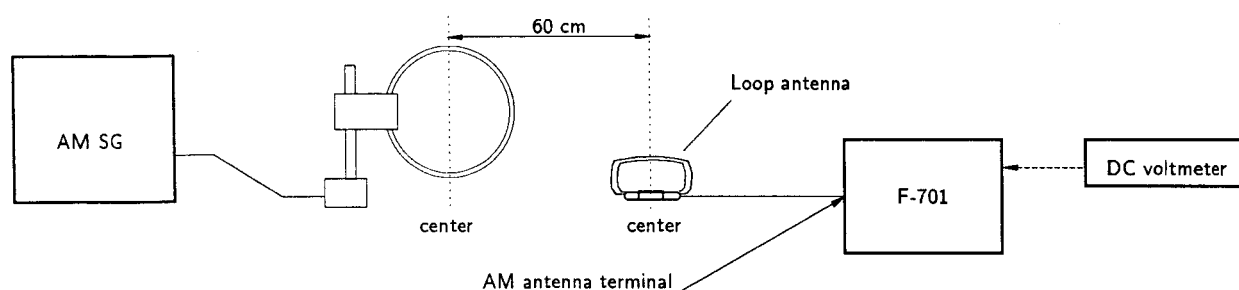


Fig. 2 AM Tuner Connection

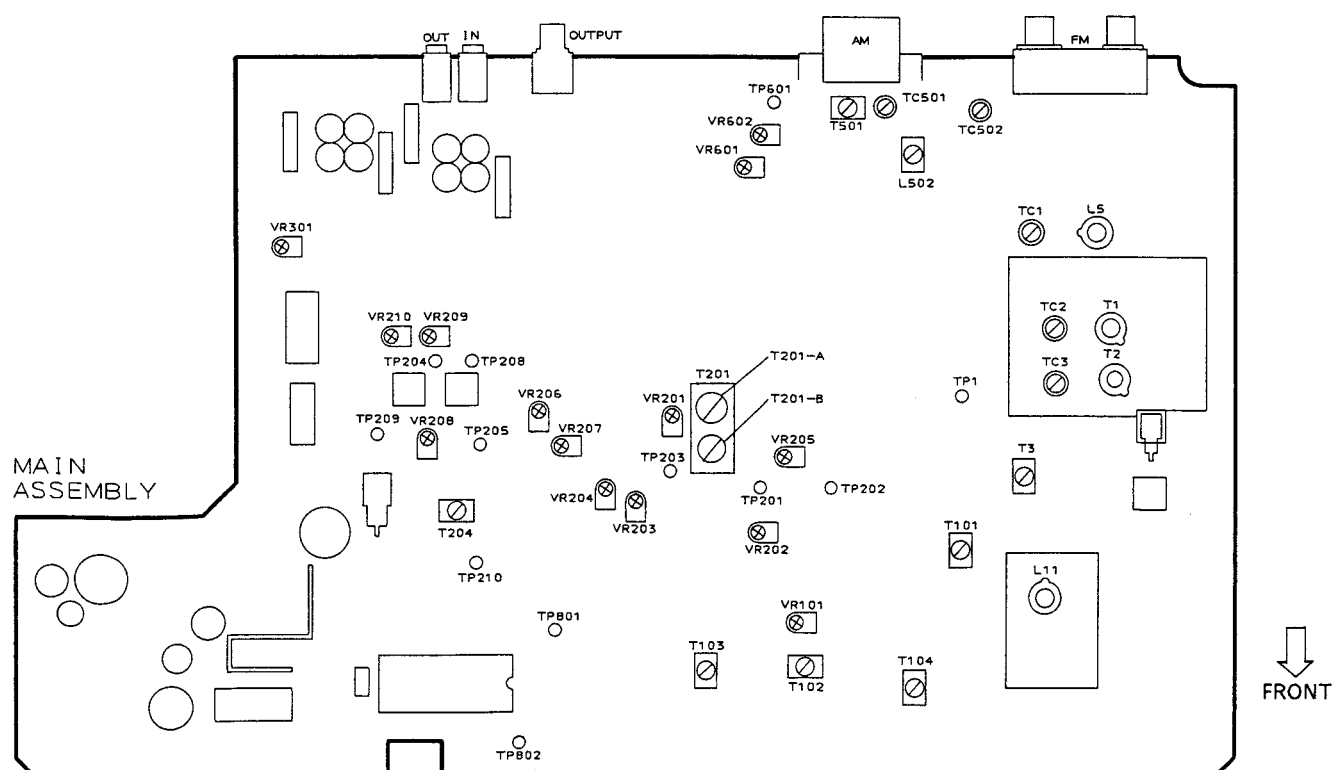


Fig. 3 Adjusting point



## 4. REGLAGES

### PREPARATIFS

- Pour régler le mode d'essai, couper le circuit TP801 et TP802 (Masse), puis le réouvrir.
- Régler TC1 – TC3 et VR202 sur leur centre mécanique.

### Réglage du tuner FM

- Raccorder comme illustré à la figure 1.
- Régler la fonction sur FM.

Ordre	Réglage	FM SG (1 kHz $\pm$ 75 kHz dev).			Affichage de fréquence de réception F-701	Réglage	
		Fréquence (MHz)	Modulation	Niveau (dB $\mu$ V) [Charge]		Emplacement	Spécification
1	Réglage VT d'entrée	ABSENCE DE SIGNAL D'ENTREE			108 MHz NORMAL ou SUPER NARROW	L11	Régler afin que la tension entre TP1 et la masse soit de 21,0 $\pm$ 0,1V.
2					87,5 MHz NORMAL ou SUPER NARROW	–	Contrôler si la tension entre TP1 et la masse est bien de 7,6V $\pm$ 0,5V.
3	Réglage d'augmentation de sensibilité d'entrée	90,0	MONO	Entrée faible	90,0 MHz NORMAL	L5, T1, T2	Régler pour obtenir la tension maximale entre TP210 et la masse. Répéter ces deux étapes jusqu'à ce que les deux spécifications soient atteintes (*1).
4		106,0	MONO	Entrée faible	106,0 MHz NORMAL	TC1 – TC3	
5	Réglage d'augmentation de sensibilité d'étage if	98,0	MONO	Entrée faible	98,0 MHz NARROW	T3, T101 – T103	Régler afin que la tension entre TP210 et la masse soit maximale.
6					98,0 MHz SUPER NARROW	T104	
7	Réglage de compteur T de détection (1)	98,0	MONO	54	98,0 MHz NORMAL	T201 – B	Après avoir réglé la tension entre TP201 et TP202 à 0 $\pm$ 100mV, vérifier si les signaux modulés sont sortis à la borne de sortie.
8	Réglage de compteur T de détection (2)					T204	Après avoir réglé la tension entre TP204 et TP205 à 0 $\pm$ 100mV, vérifier si les signaux modulés sont sortis à la borne de sortie.
9	Reglage de la distorsion monophonique (NORMAL)	98,0	MONO	54	98,0 MHz NORMAL	T201 – A VR201 (T201 – B)	Court-circuiter TP204 et TP208 et régler de façon à minimiser la distorsion. Si cette valeur ne peut être obtenue, tourner T201-B, la tension entre TP201 et TP202 dans une plage de 0 $\pm$ 100mV, puis répéter le réglage cidessus.
10	Réglage de la distorsion de la troisieme harmonique mono (NORMAL)	98,0	MONO	54	98,0 MHz NORMAL	VR208	Régler VR208 pour que la tension CA du TP209 soit au minimum (moins de 80 mV).
11						T204	Ouverture TP204, TP208 : Régler T204 afin de réduire la distorsion au minimum.
12						VR209	Régler VR209 pour que la distorsion (troisième harmonique) soit réduite au minimum.
13	Répéter les étapes 11 et 12 ci-dessus afin de réduire la distorson au minimum (moins de 0,2%).						
14	Réglage de la distorsion de la troisieme harmonique mono (SUPER NARROW)	98,0	MONO	54	98,0 MHz SUPER NARROW	VR210	Régler VR210 pour que la distorsion soit reduite au minimum (moins de 0,4%).
15	Réglage d'équilibrage SUB	98,0	MONO	54	98,0 MHz NORMAL	VR205	Régler pour minimiser la sortie à TP203 (tension CA).

Ordre	Réglage	FM SG (1 kHz $\pm$ 75 kHz dev).			Affichage de fréquence de réception F-701	Réglage	
		Fréquence (MHz)	Modulation	Niveau (dB $\mu$ V) [Charge]		Emplacement	Spécification
16	Réglage VCO	108	OFF	54	108,0MHz NORMAL ou SUPER NARROW	VR601	Régler afin que la sortie à TP601 soit de 38 kHz $\pm$ 100Hz.
17	Réglage d'annulation pilote	107 (*2)	PILOTE SEULEMENT	54	107 MHz NORMAL	VR602	Régler afin de minimiser la tension CA de la borne de sortie.
18	Réglage de distorsion stéréo (NORMAL)	89 (*2)	L - ONLY	60	89 MHz NORMAL	VR203	Régler afin de minimiser la distorsion. Si cette valeur ne peut être obtenue, tourner T3, T101, T102 et T103 dans une plage de $\pm 90^\circ$ .
19	Réglage de distorsion stéréo (SUPER NARROW)	89,0 (*2)	L - ONLY	60	89.0 MHz SUPER NARROW	VR204	Régler afin de minimiser la distorsion. Si cette valeur ne peut être obtenue, tourner T104 dans une plage de $\pm 90^\circ$ . (Vérifier l'étape 18 après)
20	Réglage de séparation	89 (*2)	R - ONLY	60	89 MHz NORMAL	VR206	Régler pour obtenir une séparation D $\rightarrow$ G maximale.
21			L - ONLY			VR207	Régler pour obtenir une séparation G $\rightarrow$ D maximale.
22	Réglage de séparation de réduction de bruit	89 (*2)	STEREO	60	89 MHz NORMAL MPX NR ON	VR301	Régler VR301 pour que le niveau de sortie de la borne de sortie se situe entre +1dB et 1,5dB quand le filtre MPX NR est sur ON en comparaison à quand il est sur OFF.
23	Réglage de compteur S	89	MONO	50	89,0 MHz NORMAL	VR202	Régler l'indication du compteur S sur 50 dB $\mu$ .
24				75		VR101	Régler l'indication du compteur S sur 75 dB $\mu$ .

(\*1) Les réglages du modèle HEWZI se terminent avec l'étape 4.

(\*2) Modulation stéréo : Principale 1 kHz G + D  $\pm$  68,25 kHz

Pilote 19 kHz  $\pm$  6,75 kHz

## Réglage du tuner AM

- Raccorder comme illustré à la figure 2.
- Régler TC501 et TC502 sur leur centre mécanique.
- Les phases 1 et 2 doivent être exécutées en mode SUPER NARROW ou NORMAL et les phases 3 à 5 en mode SUPER NARROW.

Ordre	Réglage	AM SG (400 kHz 30% modulation)		Affichage de fréquence de réception F-701	Réglage	
		Fréquence(kHz)	Niveau(dBμV/m)		Emplacement	Spécification
1	Réglage VT d'entrée	ABSENCE DE SIGNAL D'ENTREE		531 kHz	L502	Régler afin que la tension entre TP1 et la masse soit de 2,0 ±0,2V.
2				1602 kHz	TC502	Contrôler si la tension entre TP1 et la masse est bien de 16,0 ±0,2V.
3	Réglage d'augmentation de sensibilité d'entrée	603	Entrée faible	603 kHz	T501	Régler afin de maximiser la tension entre TP501 et la masse.
4		1395	Entrée faible	1395 kHz	TC501	
5	Répéter les étapes 3 et 4 jusqu'à l'obtention d'un réglage optimal.					

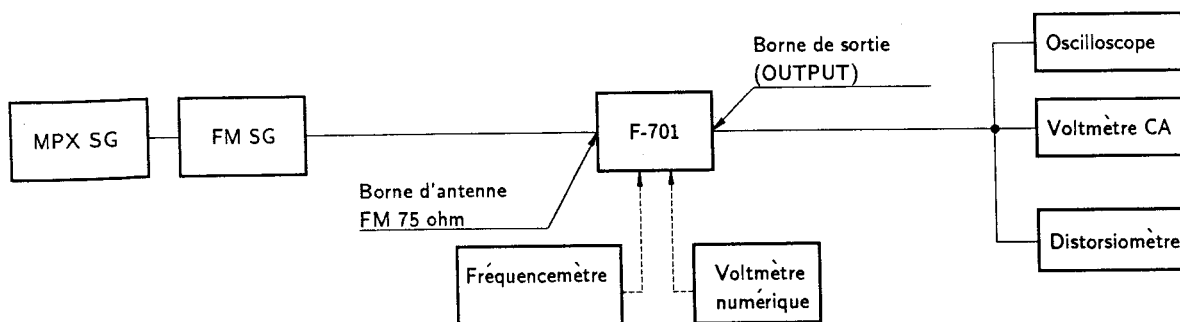


Fig. 1 Connexion du tuner FM

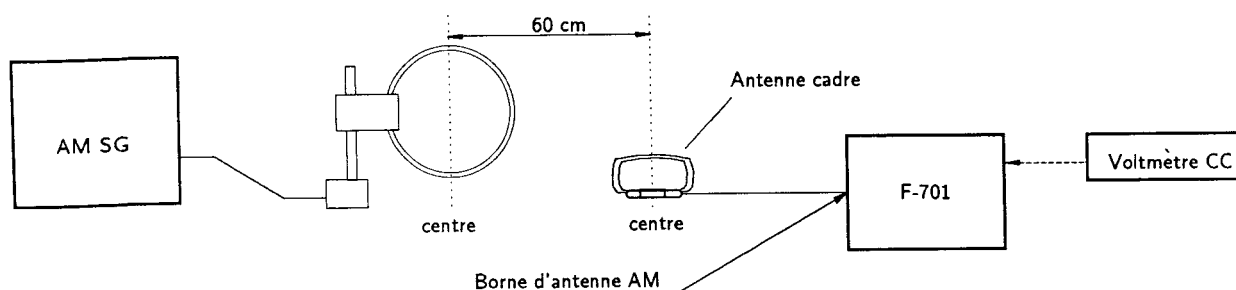


Fig. 2 Connexion du tuner AM

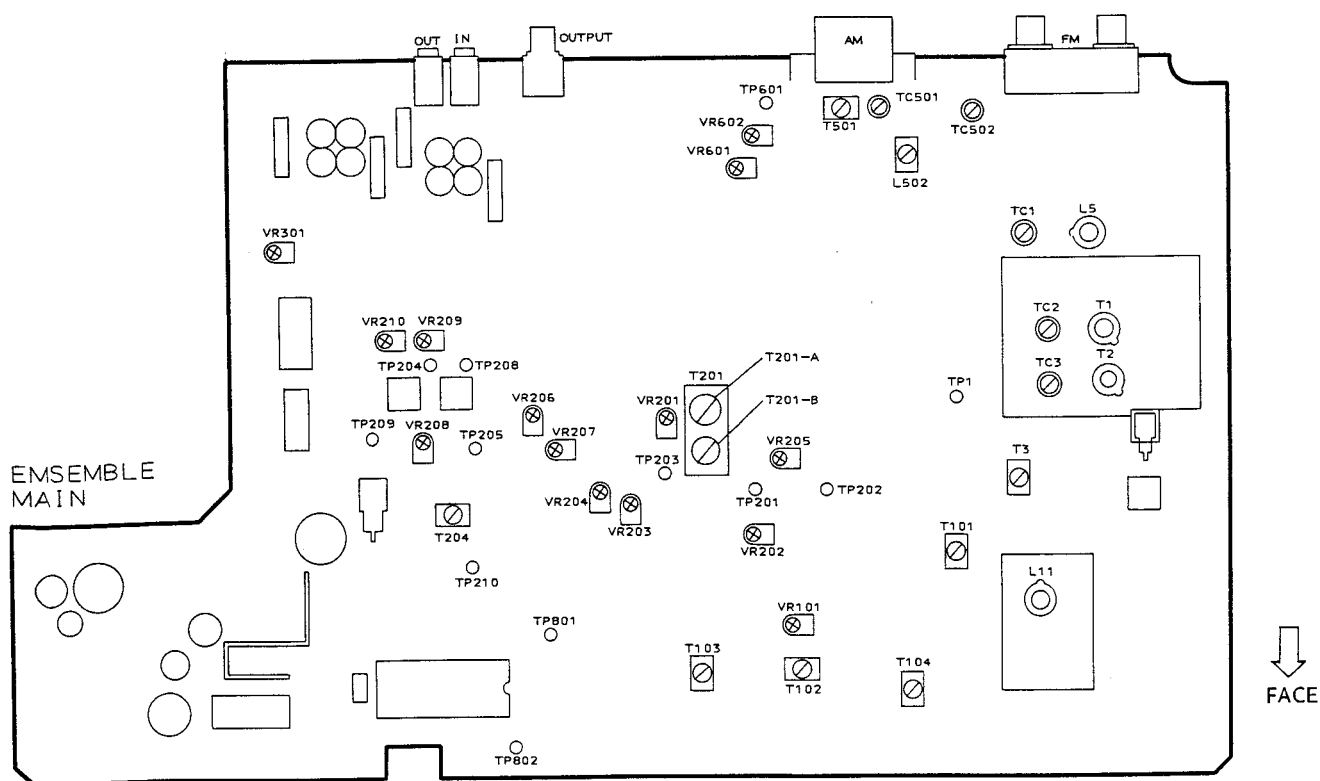


Fig. 3 Points de Réglage

## 4. AJUSTES

### PREPARACIONES

- Para establecer el modo de prueba, cortocircuite TP801 y TP802 (masa) y después abra dicho cortocircuito.
- Coloque TC1 a TC3 y VR202 en sus centros mecánicos.

### Ajuste del sintonizador de FM

- Conecte como lo indica la Fig. 1.
- Seleccione la función de FM.

Paso N°	Ajuste	FM SG (desv. 1±75kHz)			Indicador de frecuencia de recepción del F-701	Ajuste	
		Frecuencia (MHz)	Modulación	Nivel (dBμV) [Carga]		Punto de ajuste	Especificación
1	Ajuste de VT de la sección de entrada	Ausencia de señal			108,0 MHz NORMAL o SUPER NARROW	L11	Ajuste de modo que la tensión entre TP1 y masa sea 21,0 ± 0,1V.
2					87,5 MHz NORMAL o SUPER NARROW	—	Confirme que la tensión entre TP1 y masa sea 7,6 ± 0,5V.
3	Ajuste de aumento de sensibilidad de la sección de entrada	90,0	MONO	Entrada débil	90,0 MHz NORMAL	L5, T1, T2	Ajuste de modo de obtener la máxima tensión entre TP210 y masa. Repita estos dos pasos hasta que ambas especificaciones sean satisfechas. (*1)
4		106,0	MONO	Entrada débil	106,0 MHz NORMAL	TC1 – TC3	
5	Ajuste de aumento de sensibilidad de la etapa de FI	98,0	MONO	Entrada débil	98,0 MHz NARROW	T3, T101 – T103	Ajuste de modo de obtener la máxima tensión entre TP210 y masa.
6					98,0MHz SUPER NARROW	T104	
7	Ajuste del medidor T de la detectora(1)	98,0	MONO	54	98,0 MHz NORMAL	T201 – B	Después de ajustar la tensión entre TP201 y TP202 a 0±100mV, confirme que las señales moduladas estén presentes en el terminal de salida.
8	Ajuste del medidor T de la detectora(2)					T204	Después de ajustar la tensión entre TP204 y TP205 a 0±100mV, confirme que las señales moduladas estén presentes en el terminal de salida.
9	Ajuste de distorsión monoaural (NORMAL)	98,0	MONO	54	98,0 MHz NORMAL	T201 – A VR201 (T201 – B)	Cortocircuite TP204 y TP208 y ajuste de la forma que la distorsión se reduzca al mínimo. Si esto no fuera posible, gire T201 – B para ajustar la tensión entre TP201 y TP202 a 0±100mV, y luego repita el ajuste anterior.
10	Ajuste de la distorsión de la tercera armónica en el modo monoaural (NORMAL)	98,0	MONO	54	98,0 MHz NORMAL	VR208	Ajuste VR208 hasta que la tensión de CA en TP209 sea mínima(menos de 80mV).
11						T204	TP204 y TP208 abiertos; Ajuste TP204 de forma que la distorsión se reduzca al mínimo.
12						VR209	Ajuste VR209 de forma que la distorsión (tercera armónica) se reduzca al mínimo.
13	Repita los pasos 11 y 12 anteriores de forma que la distorsión se reduzca al mínimo (menos del 0,2%).						
14	Ajuste de la distorsión de la tercera armónica en el modo monoaural (SUPER NARROW)	98,0	MONO	54	98,0 MHz SUPER NARROW	VR210	Ajuste VR210 de forma que la distorsión se reduzca al mínimo (menos del 0,4%).
15	Ajuste de equilibrio secundario	98,0	MONO	54	98,0 MHz NORMAL	VR205	Ajuste de modo de minimizar la salida por TP203 (tensión de CA).

## 5. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

### 5.1 PD5187A (IC801)

#### ● Tuner Control $\mu$ -Com

##### ● Pin Function

No.	Pin name	I/O	Function	Active
1	PMUT	O	Power source mute	H
2	10K/9K	I	AM step switcher, FM step switcher	H/L
3	ROT A	I	Rotary encoder input	H/L
4	ROT B	I		
5	FM SM	I	FMS meter input	-
6	AM SM	I	AMS meter input	-
7	NOISE/RST	I/O	Noise input/ reset output	- /L
8	STOP	I	Auto-stop input	L
9	MUTE	O	Mute output	H
10	MONO	O	Forced monaural output	H
11	FM+B/AM+B	O	FM+B output/ AM+B output	H/L
12	KEY IN $\phi$	I	Key input	L
13	ATT2	O	RF ATT control	H/L
14	ATT2	O		H/L
15	AC IN	I	AC input	-
16	POWER IND	O	Power injector output (standby)	L
17	STEREO IN	I	Stereo input	L
18	NR	O	Noise reduction output	H
19	SSS	O	SSS output	H
20	S-MPX	O	S-MPX output	H
21	REM IN		Remote control input	H/L
22	CN VSS	-	GND	-
23	RESET	I	Reset input	L
24	Xin	I	Oscillator input	H/L
25	Xout	O	Oscillator output	H/L
26	VSS	-	GND	-

No.	Pin name	I/O	Function	Active
27	SELECT	I	model switching	L
28	KEYIN 1	I	Key input 1	L
29	KEYIN 2	I	Key input 2	L
30	KEYIN 3	I	Key input 3	L
31	KEYIN 4	I	Key input 4	L
32	KEYIN 5	I	Key input 5	L
33	KEYIN 6	I	Key input 6	L
34	KEYIN 7	I	Key input 7	L
35	S NARROW	O	Super narrow	L
26	NORMAL	O	Normal	L
27	FL AC	O	FL switch	L
38	POWER	O	Power output	L
39	AND A/B	O	Antenna AB switching	H/L
40	KEYOUT 4	O	Key output	L
41	KEYOUT 3	O		L
42	KEYOUT 2	O		L
43	KEYOUT 1	O		L
44	TEST	I	Test data (for production)	L
45	LC7570③	O	LC7570 ③ enable	H
46	LC7570②	O	LC7570 ② enable	H
47	FL BLANK	O	FL blanking (light off)	L
48	LC7570①	O	LC7570 ① enable	H
49	PLL CE	O	PLL (CX7975B) chip enable	L
50	CLK	O	Clock (serial transmission)	H
51	DATA	O	Data (serial transmission)	H
52	V <sub>CC</sub>	-	+5V power source	-

## 6. FOR F – 701/HE, F – 701 – G/HE AND HEWZI TYPES

### CONTRAST OF MISCELLANEOUS PARTS

#### NOTES:

- Parts marked by “NSP” are generally unavailable because they are not in our Master Spare Parts List.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by “ $\odot$ ” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

**F-701/HE, F-701-G/HE, HEWZI and F-701/HEWZ have the same construction except for the following :**

Mark	Symbol & Description	Part No.				Remarks
		F – 701 /HEWZ	F – 701 /HE	F – 701 – G /HE	F – 701 – G /HEWZI	
$\odot$ NSP	MAIN assembly	AWZ4098	AWZ4099	AWZ4099	AWZ4098	Name plate
	POWER assembly	AWZ4100	AWZ4525	AWZ4525	AWZ4100	
NSP	Rotary knob	AAA1012	AAA1012	AAA1013	AAA1013	
	Button(MEMORY SCAN, MEMORY, CLASS)	AAD1682	AAD1682	AAD2301	AAD2301	
	Station button A (ABS)	AAD2218	AAD2218	AAD2222	AAD2222	
	Station button B (ABS)	AAD2219	AAD2219	AAD2223	AAD2223	
	Name plate (Metal)	AAM1029	AAM1029	.....	.....	
	Budge brown 3156N	.....	.....	PAN1262	PAN1262	
	Packing case	AHD2241	AHD2241	AHD2246	AHD2246	
	Panel base	AMB1962	AMB1962	AMB1963	AMB1963	
	Front panel	ANB1497	ANB1497	ANB1498	ANB1498	
	Bonnet	AZN1745	AZN1745	ANE1269	ANE1269	
	Ground plate	ANK1091	.....	.....	ANK1091	
	Operating Instructions (German/Italian)	ARC1334	.....	.....	ARC1334	
	Operating Instruciones (English/German/French/ Italian/Swedish/Dutch/ Spanish/Portuguese)	.....	ARE1229	ARE1229	.....	
	Screw	BBT30P060FZK	BBT30P060FZK	BBT30P060FNI	BBT30P060FNI	

**MAIN ASSEMBLY**
**AWZ4099 and the AWZ4098 have the same construction except for the following :**

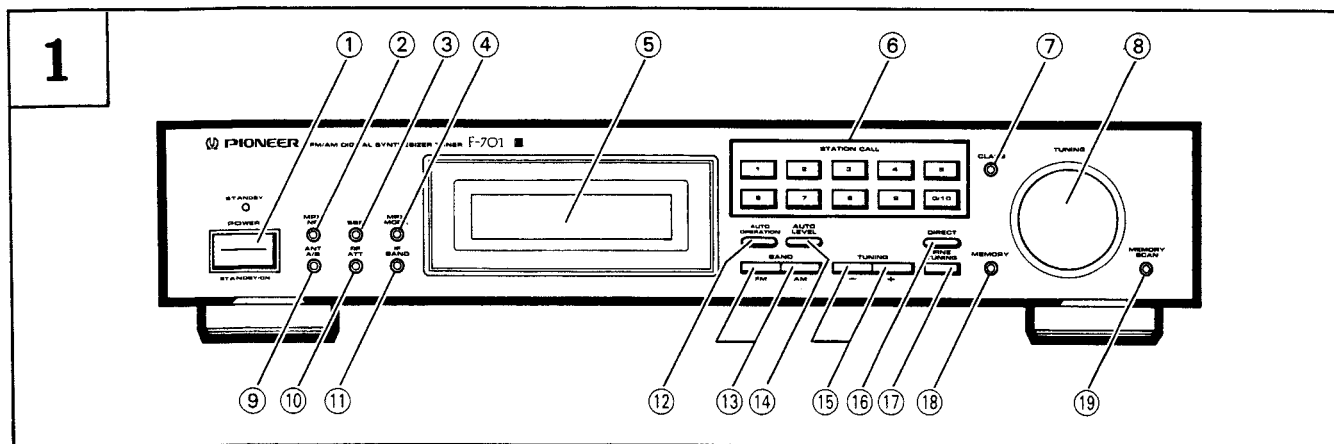
Mark	Symbol & Description	Part No.		Remarks
		AWZ4098	AWZ4099	
	C615, 616 C617, 618 C620, 621	CEEA470M25 CQMXA682J100 CKDYB152K50	CEEA100M25 CQMXA822J100 .....	
	L602 - 604	LAU010K	.....	
	R603, 605 R604, 606 R612, 613	RDR1/4PM682J RDR1/4PM202J RDR1/4PM471J	RDR1/4PM333J RDR1/4PM102J RDR1/4PM102J	

**POWER ASSEMBLY**
**AWZ4525 and the AWZ4100 have the same construction except for the following :**

Mark	Symbol & Description	Part No.		Remarks
		AWZ4100	AWZ4525	
△	L701	ATF1117	.....	

## 7. PANEL FACILITIES

### FRONT PANEL FACILITIES



(See Fig. 1)

#### ① POWER STANDBY/ON switch/indicator

This is the switch for electric power.

**ON** : When set to the ON position, power is supplied and the unit becomes operational.

**STANDBY** : When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The STANDBY indicator lights when the power is STANDBY, and goes out during ON.

#### NOTE:

- As long as the power cord is connected to the outlet, the memory continues to be protected.
- If the power cord is unplugged, the memory will be retained for several days.

#### ② MPX NR button

When MPX NR is on, MPX NR indicator lights up.

During reception of stereo broadcasts where the signal is weak, set this to ON if noise is a problem. Noise will be suppressed and sound quality will become clearer.

#### NOTE:

- If MPX NR is turned on during FM reception, the MPX MODE automatically switches to AUTO.
- This button's status is preset for each station in station memory.
- This does not operate during AM signal reception or when the broadcast is monaural.

#### ③ SSS button

When SSS is on, SSS indicator lights. If turned on during reception of AM or when during reception of a monaural broadcast, this will produce a simulated stereo effect which provides rich ambience.

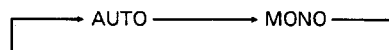
SSS: Spectrum Simulated Stereo.

#### NOTE:

- If SSS is turned on during FM reception, the MPX MODE automatically switches to MONO.
- This button's status is preset for each station in station memory.

#### ④ MPX (multiplex) MODE button

Mode changes as follows each time this button is pressed:



This button does not affect AM reception.

#### • AUTO:

AUTO indicator lights up.

Depending on the broadcast station, STEREO or MONO is automatically selected.

STEREO indicator lights up when a FM stereo broadcast is received.

#### NOTE:

When the signal level is too weak for reception, sound output is automatically muted.

#### • MONO:

MONO indicator lights up.

To receive stereo broadcasts in monaural.

If there is a lot of noise during stereo reception of a weak signal, you can reduce the level of noise by switching to MONO.

#### NOTE:

- Muting is not effective even when the signal level is weak.
- The setting of this button is memorized together with the station in the station memory.

#### ⑤ Operation display

#### ⑥ STATION CALL buttons

Use these buttons to preset stations and to receive already preset stations.

They are also used when performing direct access tuning.

#### ⑦ CLASS button

Use to switch between preset memory classes 1 to 4. In each class, one station can be memorized in each of the 1 to 10 STATION CALL buttons, enabling a total of 40 stations to be memorized.



**⑧ TUNING knob**

Use for manual tuning. To raise the frequency, turn in a clockwise direction; to lower the frequency, turn counterclockwise.

**⑨ ANT A/B button**

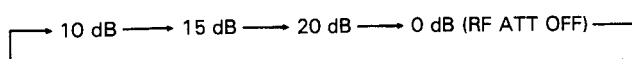
Selects between two antennas connected to the FM antenna A and B terminals. ANT- **A** or ANT- **B** indicator lights up.

**NOTE:**

*This button's status is preset for each station in station memory.*

**⑩ RF ATT button**

Use when FM reception is too strong, resulting in a distorted sound. The RF ATT indicator lights, and the set attenuator level is indicated in the station/signal display. Press once and the current level is displayed. Each subsequent time the button is pressed, the level changes in the following order:



Normally, this button should be set to 0.

**NOTE:**

*This button's status is preset for each station in station memory.*

**⑪ IF BAND button**

Each time this button is pressed the bandwidth of the IF circuit switches between "normal" and "super narrow" for the FM band and the AM band.

The selected bandwidth is displayed as follows:

The NORMAL or SUPER NARROW indicator lights up.

Set to SUPER NARROW in case of interference from other stations.

**NOTE:**

*The setting of this button is memorized together with the station in the station memory.*

**⑫ AUTO OPERATION button (During FM reception only)**

Press this button, and the unit automatically switches between the following modes to find the one for optimum reception.

- RF ATT (10/15/20/0)
- ANT A/B
- IF BAND (NORMAL/SUPER NARROW)
- MPX NR (ON/OFF)
- MPX MODE (AUTO/MONO)

Automatically switches to mono in case of interference.

Muting turns on automatically if signal is weak.

**⑬ BAND selector buttons****FM:**

Press to receive FM broadcasts.

**AM:**

Press to receive AM broadcasts.

**⑭ AUTO LEVEL button (During FM reception only)**

This lets you select from among six signal threshold levels, to determine the received signal level above which Auto Tuning will detect a station and stop. The Signal indicator and Station/Signal display indicate the set level. If the station's signal level is lower than the set threshold level, tuning will not stop at that station. Press once and the current level is displayed. Each subsequent time the button is pressed, the level changes in order.

**⑮ TUNING (+, -) buttons**

If you press and immediately release the button, the frequency changes a step at a time. If you keep the button depressed for a few moments before releasing it, then auto-tuning operates and stops at the first station received.

You can set the signal level you want to be regarded as a station with the AUTO LEVEL button (during FM reception only).

**⑯ DIRECT button**

When this button is pressed, the STATION CALL buttons function as ten-key number buttons for direct input of the desired reception frequency.

When FINE TUNING is on during FM reception, frequencies can be specified in 10 kHz steps. If FINE TUNING is off, frequencies can be specified in 50 kHz steps.

**⑰ FINE TUNING button (During FM reception only)**

Use this when sound is distorted owing to radio interference even though you are tuned to your desired frequency. When FINE TUNING is operating, the FINE indicator lights.

During FM reception, the frequency is changed in 10 kHz steps. (When FINE TUNING is off, it changes in 50 kHz or 100 kHz steps.)

By changing the frequency slightly with the TUNING (+, -) buttons, noise caused by interference can be minimized.

**NOTE:**

- When FINE TUNING is on and no station is being received, muting is applied automatically to prevent noise. Muting is not applied when a station is received, even if there is much noise and interference.
- Stations tuned using FINE TUNING can be preset.
- FINE TUNING is not possible with TUNING knob.

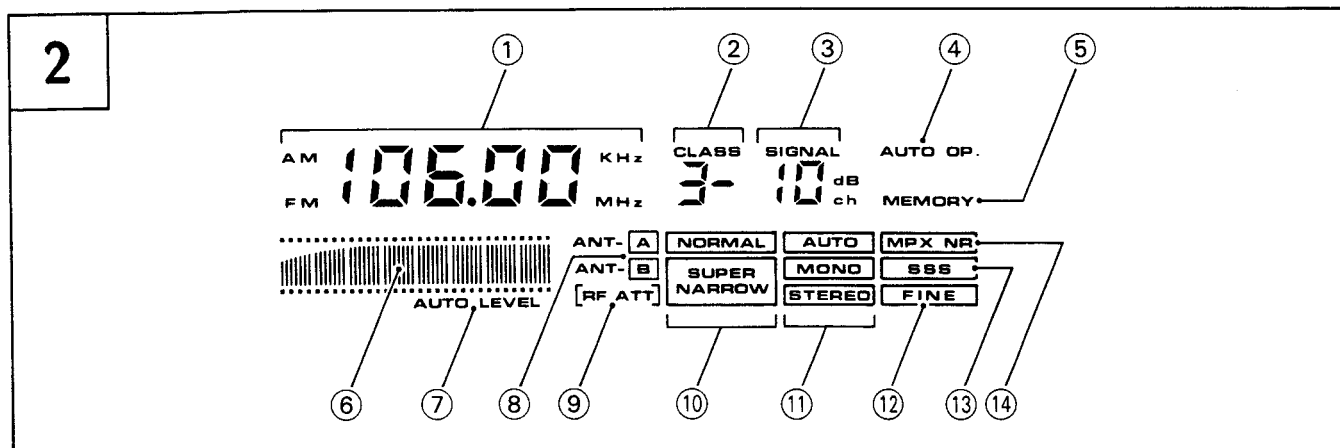
**⑱ MEMORY button**

Press to memorize preset stations. The MEMORY indicator will remain lit for several seconds. While the indicator is lit, select the class you want to memorize with the CLASS button, and press the STATION CALL button (1 through 0/10) you want to memorize.

**⑲ MEMORY SCAN button**

Press to receive currently selected class and preset stations for a few seconds in sequence. Press again and reception of the station presently being received will continue.

## Operation display



(See Fig. 2)

**① Frequency indicator**

shows reception band and frequency.

**② CLASS indicator**

Shows preset memory class 1—4.

**③ SIGNAL level/STATION No./RF ATT level indicator**

- After performing Manual tuning, Auto tuning, or Direct tuning, "SIGNAL" lights, and signal strength is displayed. When the signal is weak, "LO" is displayed. If this happens, point the antenna in the direction that provides optimum reception. When the signal is too strong, "HI" is displayed. When this happens, press the RF ATT button, and adjust the level.
- When recalling a station preset in a STATION CALL button, STATION is displayed. If you press the STATION CALL button of the recalled station once more, "SIGNAL" lights, and the received signal strength is displayed for several seconds.
- During RF ATT operation, the attenuation level is displayed for several seconds (during FM reception only).

**④ AUTO OP. indicator (red)**

This lights when AUTO OPERATION is operating.

**⑤ MEMORY indicator**

Lights for a several seconds when MEMORY button is pressed.

**⑥ Signal indicator**

When setting AUTO LEVEL, the reception level step is displayed.

**⑦ AUTO LEVEL indicator**

This lights when setting AUTO LEVEL.

**⑧ ANT- A , ANT- B indicators**

These indicate the selected antenna.

**⑨ RF ATT indicator**

Lights when RF ATT of 10 dB, 15 dB, or 20 dB has been selected.

**⑩ NORMAL, SUPER NARROW indicators**

These indicate the selected IF BAND mode.

**⑪ AUTO, MONO, STEREO (red), indicators****AUTO/MONO:** Indicates the selected MPX mode.**STEREO:** When the MPX mode is switched to AUTO, this lights when an FM stereo broadcast is received.**⑫ FINE indicator**

This lights when the FINE TUNING button is pressed to change the frequency in 10 kHz steps during FM reception.

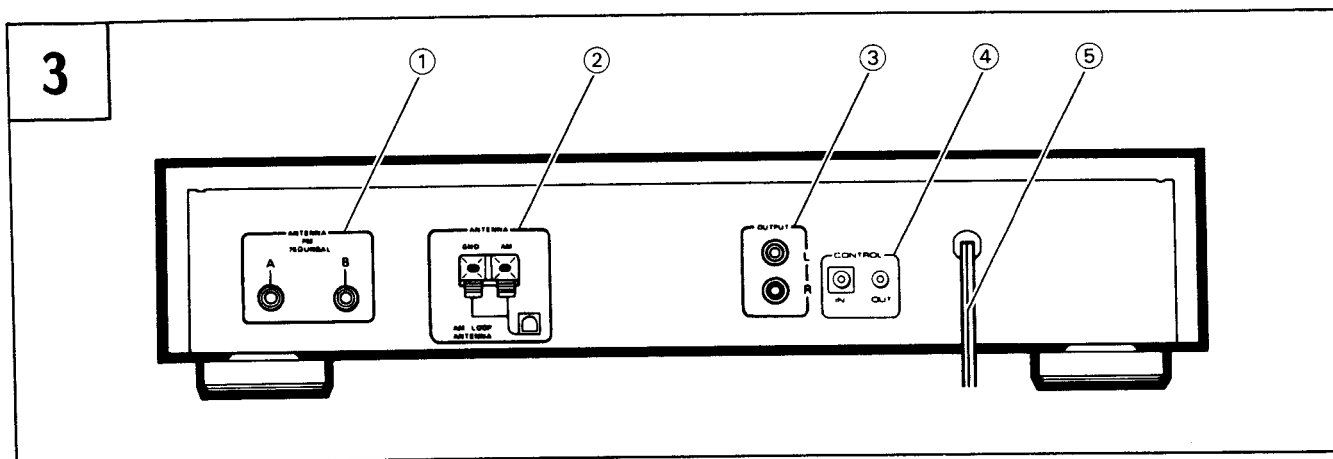
**⑬ SSS indicator (red)**

This lights when SSS (Spectrum Simulated Stereo) is ON.

**⑭ MPX NR indicator (red)**

This indicator lights when the MPX NR is operating.

## REAR PANEL FACILITIES



(See Fig. 3)

### ① FM ANTENNA jacks

Connect to the accessory FM T-type antenna cord or a separately purchased FM antenna. There are two jacks, A and B, so you can connect two antennas pointing in different directions towards different broadcasting stations.

### ② AM ANTENNA terminals

Connect to the accessory AM loop antenna or a separately purchased AM antenna.

### ③ OUTPUT jacks

Connect to a stereo amplifier's TUNER jacks.

### ④ CONTROL terminals

### ⑤ Power cord

## 8. SPECIFICATIONS

### FM Tuner Section

Frequency range .....	87.5 MHz to 108 MHz
Usable Sensitivity	
NORMAL .....	Mono: 11.2 dBf, IHF (1.0 $\mu$ V/75 $\Omega$ )
50 dB Quieting Sensitivity	
NORMAL .....	Mono: 15.9 dBf, IHF (1.7 $\mu$ V/75 $\Omega$ )
	Stereo: 36.2 dBf, IHF (17.7 $\mu$ V/75 $\Omega$ )
Sensitivity (DIN)	
NORMAL .....	Mono: 0.8 $\mu$ V/75 $\Omega$
	Stereo: 26 $\mu$ V/75 $\Omega$
Signal-to-Noise Ratio .....	Mono: 94 dB (at 80 dBf)
	Stereo: 87 dB (at 80 dBf)
Signal-to-Noise Ratio (DIN) .....	Mono: 76 dB
	Stereo: 73 dB
Distortion (at 80 dBf)	
NORMAL .....	Mono: 0.03 % (1 kHz)
	Stereo: 0.05 % (1 kHz)
SUPER NARROW .....	Mono: 0.2 % (1 kHz)
	Stereo: 0.25 % (1 kHz)
Capture Ratio	
NORMAL .....	1.0 dB
Alternate Channel Selectivity	
NORMAL .....	80 dB (400 kHz)
SUPER NARROW .....	80 dB (300 kHz)
Stereo Separation .....	60 dB (1 kHz)
	50 dB (20 Hz to 10 kHz)
Frequency Response .....	20 Hz to 15 kHz ( $\pm 0.5$ dB)
Image Response Ratio .....	80 dB
IF Response Ratio .....	100 dB
AM Suppression Ratio .....	70 dB
Spurious Response Ratio .....	80 dB
Subcarrier Product Ratio .....	60 dB
Muting Threshold .....	23.2 dBf — 61.2 dBf (6 step)
Antenna Input .....	75 $\Omega$ unbalanced

### AM Tuner Section

Frequency range .....	531 kHz to 1,602 kHz (Step 9 kHz)
Sensitivity (IHF, Loop antenna) .....	150 $\mu$ V/m
Selectivity .....	40 dB
Signal-to-Noise Ratio .....	50 dB
Image Response Ratio .....	40 dB
IF Response Ratio .....	60 dB
Antenna .....	Loop Antenna

### Audio Section

Output (Level/Impedance)	
FM (100 % MOD) .....	650 mV/0.9 k $\Omega$
AM (30 % MOD) .....	150 mV/0.9 k $\Omega$

### Miscellaneous

Power requirements .....	a.c. 220 — 230 Volts~, 50/60 Hz
Power Consumption .....	20 W
Dimensions .....	420 (W) x 86 (H) x 334 (D) mm
Weight (without package) .....	4.0 kg

### Furnished Parts

FM T-type Antenna with 75 $\Omega$ PAL Connector .....	1
AM Loop Antenna .....	1
Connecting Cord with Pin Plugs .....	1
Control Cord .....	1
Operating Instructions .....	1

### NOTE:

*Specifications and design subject to possible modification without notice due to improvements.*

## MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzene, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

### STATION PRESET "MEMO"

It is recommended that you make a note of the preset stations.

STATION No.	1	2	3	4	5	6	7	8	9	0/10
CLASS 1										
CLASS 2										
CLASS 3										
CLASS 4										